Dredges go into dry dock together
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Cover photo by Jeffrey Henon, Public Affairs Office. The Dredge Essayons facing landward in Vigor Shipyards dry dock for her annual maintenance.

Correction: We incorrectly spelled the author’s name for the article, “Afternoon ‘gut-punch’ stirs defensive response”, which ran on page 16 of our November - December 2016 issue. The correct spelling is Erik Petersen.
Maneuvering through uncertainty

As we emerge from the winter season and move into the final month of the second quarter, I would like to commend you on a superb performance thus far. We are well on our way to executing another banner year in support of the Pacific Northwest.

Many of you have expressed some concern about uncertain times. We are in a hiring freeze, we continue to operate under fiscal constraints due to a Continuing Resolution as we deliver the program for FY17, all while watching policy changes at a frantic pace. Additionally, we are in dialogue with our national leadership about the needs for FY18 while at the same time we develop the requirements for FY19. Even the weather has added to our uncertainty. The end result is most of you are working long hours, or are looking out at the horizon wondering “what’s next.”

I want to reassure you that your leadership is taking proactive measures to reduce this uncertainty. Each of us can better cope with these uncertainties by prioritizing what we are doing, communicating our challenges upward and seizing opportunities. One of the many things I love about our culture – both within the Army and the U.S. Army Corps of Engineers – is our strong leadership. The Army has dedicated significant resources in preparing leaders – both military and civilian – who are approachable and allow us to communicate our challenges, help us to prioritize and accept prudent risk. Portland District has no shortage of these types of leaders.

Though we are busy (and some would say this is a good thing), do not lose sight of what is so important to the District – our people. Watch out for one another and when you have concerns, raise them to your chain of command. There is no problem too great. I am personally available to address uncertainty and accept prudent risk.

These are exciting times. I have not been bored since becoming your commander. It has made me a better person and it is invigorating. I pledge to continue to work to help all of you through all of the uncertainty. One thing is for certain, Portland District has a magnificent team of diverse and dedicated professionals selflessly serving our nation. What we are doing is keeping the lights on and the waters at bay, ensuring commerce moves along in the most efficient and least-expensive means, and balancing our actions with the needs for a sustainable environment. Our fellow citizens can sleep soundly because you are mitigating for potential floods and planning for the unknown. We are certain that we will work together and will use these uncertain times to make us stronger by helping each other to continue to deliver on our commitments while growing in character and competence, and improving the culture of our winning team.

See all of you at the District Ball on April 20 to celebrate our heritage, our people and our contributions to the nation. It is an honor and a privilege to serve a noble cause with professionals like you in support of our great nation and our fellow Americans.

Competence follows Character.

Col. Jose Aguilar

61st Colonel of the District
Lt. Gen. Todd T. Semonite, Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers, spoke with Corps employees Jan. 10 during a staff huddle at the Portland District Headquarters.

Semonite visited the District in order to build his understanding of the Pacific Northwest to better inform the strategic decisions about the Corps’ various responsibilities to the region. He also used the opportunity to meet with employees at the District level and reiterate his appreciation for their work and reputation.

“We are the nation’s and the world’s premiere engineering organization. We’re here to do the nation’s most difficult tasks. If nobody else can do it, they call the Corps,” said Semonite.

Semonite emphasized his three priorities for all Corps members: Strengthen the Foundation, by consistently performing to a high standard with integrity and respect; Deliver the Program, by maintaining commitments to stakeholders and to the nation at large; and Achieve the Vision, by envisioning the future of the Corps and its various projects and programs and taking the necessary steps to get there.

“Young reputation is unbelievable,” Semonite said of the Portland District. “We belong to one of the best organizations in the world. But the strength of our organization isn’t our locks or our dams — it’s our people.”
C

onvoluted, complex, difficult and time-consuming could all be adjectives used to describe public interactions with the federal government. Federal workers complying with various rules and regulations influence this perception, which is just part of the process.

But how does the public know about these various rules? Sometimes they don’t and find out later, if at all, and sometimes they stumble through the process. That’s why Marci Johnson, Portland District Section 408 manager, wants to clearly communicate about the Section 408 program, which may sound like typical bureaucratic red-tape.

“The Corps has invested millions of dollars in its federally authorized projects and we need to ensure that we protect them and the people who rely on those projects for flood control or navigation,” said Johnson about the 408 process. “While the process may seem cumbersome, Portland District will help all its applicants work through the process before and after they submit a complete 408 package,” she continued.

Section 408 of the Rivers and Harbors Act of 1899 authorizes the Corps to grant permission for the alteration, occupation or use of a Corps civil works project if the Secretary of the Army determines that the activity will not be injurious to the public interest and will not impair the usefulness of the project. For instance, if Oregon and Washington decided to build the Columbia River Crossing, a new bridge spanning the Columbia River, the states would have to submit an application for a Section 408 review.

“Building the Columbia River Crossing is going to impact the federal channel as well as federally authorized levees,” explains Johnson. “Because of the potential adverse impact that triggers the need for a Section 408 review. Realigning the channel or shutting down the channel for bridge work would affect our mission, as well as impact the flood control levees.”

Johnson provides an eight-step checklist users can follow to make the process easier.

**GENERAL SECTION 408 CHECKLIST:**

1. Date of Submission
2. Identify the purpose and need.
3. Provide a description of the proposed activity.
4. Is the proposed project a federally authorized project? Yes/No
5. Has the sponsor/diking district provided a letter of endorsement for the project? Yes/No (if yes, please attach or indicate the date provided to or sent to the Portland District)
6. There are other checklists that are required. Visit [www.nwp.usace.army.mil/Business/Altering-Corps-Projects-Section-408/](http://www.nwp.usace.army.mil/Business/Altering-Corps-Projects-Section-408/) to view them.
7. Information requested in the checklists may be submitted in an approved digital format via email or regular mail.
8. Please send the checklist(s) to both Marci E. Johnson, Section 408 Project Manager, at marci.e.johnson@usace.army.mil and to Jason McBain, P.E., Levee Safety Program Manager, at jason.d.mcbain@usace.army.mil.

Section 408 applies to individuals, private organizations and local governments for any alteration of levees, dams, navigation channels or any other federally authorized project. This is in addition to other Corps regulatory permit requirements. Please also refer to Engineering Circular 1165-2-216 for more information: [www.publications.usace.army.mil/Portals/76/Publications/EngineerCirculars/EC_1165-2-216.pdf](http://www.publications.usace.army.mil/Portals/76/Publications/EngineerCirculars/EC_1165-2-216.pdf).
Dredges Essayons and Yaquina in dry dock together

By Jeffrey Henon, Public Affairs Office

For the first time ever, Portland District dredges Essayons and Yaquina went into the same dry dock for maintenance at Vigor Shipyards, Dec. 16, 2016. Vigor Shipyards is located on Swan Island in Portland, Ore. The dredges received scheduled maintenance and some planned upgrades.

When the dredges aren’t in dry dock they’re working. Jon Blake, who has been on the Yaquina since 1985, serving the last four years as the master of the second crew, says, “When we’re underway from March through November, if there’s work to be done, we’re out there 24/7.”

Both vessels have two alternating crews that enable the ships to work around the clock during dredging season. Chris Gibbons, the Essayons’ port engineer explains, “Any vessel in continuous operation is going to have crew changes. If we’re operating in the Oregon-Washington area, the normal crew change-out is every Tuesday, so basically eight days on, six days off.”

Gibbons started working on the Essayons 28 years ago as a Vigor Shipyards employee and was hired by the Corps a year-and-a-half ago to plan the Essayons’ maintenance.

“Because of the nature of the work we don’t have downtime during the season to do maintenance.” Gibbons says, “We’re taking waves over the bow.”

There are many components of a ship that can only be inspected while in dry dock. Crews inspect everything below the waterline visually for any damage that may have occurred to the hull, propellers, rudders and bow thruster. Some components like seawater valves and the steering equipment require inspection and testing that can only be done while out of the water.

The Dredge Essayons starboard side propeller. Ship components that sit below the waterline like the hull, propellers, rudders and bow thruster can only be inspected for damage while in dry dock.
Both the Yaquina and Essayons are hopper dredges, which means they operate like giant vacuums with pipes suspended from the sides that suck sediment up from the channel bottom into storage compartments within the ship’s hull. The sediment is abrasive to the all of the components it passes through.

The abrasive nature of the sediment – typically sand – combined with the corrosive effects of the salt and brackish waters that the dredges operate in means keeping rust at bay is an ongoing battle. Rust on both ships is being addressed in multiple areas including the dredge piping, hoppers, decks and towers.

The first step in the process is abrasive blasting to remove the rust and protective coatings to reveal the condition of the steel underneath. Weakened areas will be rebuilt and re-welded with new steel before receiving a new protective coating.

Blake sums it up simply, “It’s steel, it’s rusting. You have to address it, or you won’t have a dredge very long.”

Planning the maintenance for dry dock happens all year long. Besides routine maintenance and necessary repairs, there are upgrades that are often planned years in advance. Port engineers must balance their dredge’s most pressing needs with available funding and the ability to complete the work within the dry dock time window.

Replacing the entire steering system on the Essayons is one upgrade that has been a few years in the making. Essayons has been using the original rotary vane steering system since the vessel was christened in 1982. Thirty-five years later, it is becoming difficult to find replacement parts.
The Dredge Essayons receives an entirely new steering system that requires cutting holes on both sides of the ship.

The steering system is being modernized with a simpler mechanism that consists of two hydraulic cylinders that have less points for failure and greater parts availability.

Gibbons describes the system as, “Two seals and a piston. Very little moving parts, very little maintenance concerns. We’ll have spares sitting on the shelf that, if we have a failure, we’ll just swap one out.”

Blake has been on the Yaquina for most of the dredge’s life. He joined the crew as a third mate in 1985, when the Yaquina was only four years old and has witnessed many upgrades over the years. Some of the most visible changes have happened on the bridge where change is the only constant when it comes to the electronic equipment used to navigate and monitor the Yaquina.

“Almost everything on board has been changed,” Blake says. “From communications to navigation equipment, it doesn’t look anything like it did 35 years ago.”

Regardless of whether the dredges are operating or are in dry dock, the dredge crews and the staff that support them work year-round. When the dredges are in dry dock, the crews still rotate, living on the ships when it’s their shift.

When the dredges are refloated and dredging season starts, port engineers like Gibbons don’t get a break. He’ll leave his temporary office at Vigor Shipyard and return to his permanent desk at the U.S. Moorings to repeat the process.

“Part of the mission of this year’s dry dock is to fine tune next year’s plan,” Gibbons says.
Pacific Northwest construction projects scheduled during winter months typically factor in extra days to account for extreme weather. The winter of 2017, though, hasn’t been typical. Snow, ice and frigid temperatures in the first few weeks of January made mobilizing in the Columbia Gorge particularly difficult, just as repairs were scheduled to begin on an area of shoreline adjacent to the Bradford Island fish ladder foundation at Bonneville Lock and Dam. The construction area is downstream of Bradford Island’s main spillway and is most easily accessible from the water.

“The barge we’re using to stage equipment and materials for this project had to make its way up the Columbia River during some pretty severe weather,” said Natalie Richards, Corps project manager. “Trucks hauling stone for the repair had to come down from The Dalles; road closures due to the severe weather impacted delivery.”

Barges and material did make it to Bonneville in spite of the weather, and workers began making the repairs mid-January. The Bradford Island fish ladder is critical to successful fish passage. Every fish making its way upstream must pass Bonneville Dam on its way to the upper Columbia River, Snake River and associated tributaries. The repairs are vital to ensure the integrity of the fish ladder, which was built as part of the original Bonneville Dam project in 1938. It is one of four fish ladder systems at Bonneville that provide bypass routes for upstream migrating adult salmon, steelhead, lamprey and other fish species. In 2015, more than 4 million fish swam through the fish ladders at Bonneville.

Three barges anchored in the spillway: one barge for a crane, one for an excavator and the one for materials used for repairs. After some excavation at the site, the crane will place about 7,100 cubic yards of stone onto the slope, creating a barrier strong enough to withstand the wave action caused when water flows through the spillway gates.
More than 500 visitors descended on The Dalles Lock and Dam, Jan. 28, to view more than 25 bald eagles that took up residence in Westrick Park, the green space below the dam. This marks the seventh time that the U.S. Army Corps of Engineers has hosted Eagle Watch, the annual event focused on bald eagles and raptor education.

“The bald eagles winter in Westrick Park because it’s like a secluded winter vacation home next door to a grocery store. Fish are the primary food source for the eagles, but during the winter, many rivers and streams further north have iced over. The open water of the Columbia River attracts them, which presents a great opportunity for the public to see some winter wildlife,” explains Park Ranger Amber Tilton.

In addition to viewing eagles in the wild, visitors were treated to live raptor shows courtesy of the Rowena Wild Life Clinic, the U.S. Forest Service and the Columbia Gorge Discovery Center & Museum. Visitors were able to see birds of prey up close and learn about the challenges facing raptors, including declining habitat and threats from toxic substances.

One visitor, Heidi Barry of Arlington, Ore., commented in the guest book, “I learned about their (bald eagles) nests. The biggest being 6 feet 9 inches wide and 20 inches tall. Amazing.”

If you missed this year’s event, don’t let that ruffle your feathers. Keep an eye out for next year’s event and remember that December through February are the best months to view eagles. Although the facility is closed seasonally, the adjacent Seufert Park is open year-round in the daytime.

Local resident and visitor Timothy DiGennaro, commented that he was most impressed with, “The sheer number of bald eagles that populate this particular area.” DiGennaro added, “Always a great opportunity and thankful the U.S. Army Corps offers this wonderful mini museum for visitors locally and worldwide.”
The shadow of Oroville Dam crisis: District strives to maintain dams

By Tom Conning, Public Affairs Office

Umultuous winter storms have tested and stretched the limits of infrastructure in the western United States, as the recent Oroville Dam crisis has shown. However, these aging and massive structures still provide a multitude of benefits to local communities. And although they may not seem complex, they do have a variety of densities – figuratively and literally. One density is how a dam releases water. There are four ways dams can release water: powerhouse (if the dam produces hydropower), regulating outlets, spillways or low level outlets.

Dams need constant maintenance and upgrades, including the mechanisms that are used to release water. This is the case for seven of the 13 dams Portland District operates in the Willamette Valley, as well as several other District dams. Jeff Ament, Portland District project manager, is part of the current assessment process to determine which dams need regulating outlet repair and which outlets should have priority.

“There is limited funding available to support projects like this,” said Ament. “We can’t just go in and upgrade all the regulating outlet systems at once,” Ament explains. “Therefore we need to determine several things: which regulating outlets are in the worst shape, in order to prioritize them based on condition; which projects have the most impacts if a regulating outlet were to fail; what needs to be done at each project and what funding is needed to support that.”

Regulating outlets are the primary method typically used to pass water through a non-hydropower dam. Hydropower dams use powerhouse as the primary method to pass water, but also use regulating outlets as a secondary method when electricity demand, maintenance outages or other restrictions limit powerhouse use. Spillway gates are generally used only to pass large flows.

Logan Negherbon, Portland District hydraulic engineer, explained there could be several failure scenarios.

“If we need to pass flow through an RO but cannot, this could result in drying up the river downstream of the dam, and in the right circumstance, we could be forced to fill the reservoir and use the spillways to pass flow. In the flood season, dams depend on a low reservoir pool to ‘catch’ runoff from rain events and slowly release that flow downstream. Conversely, if a regulating outlet cannot close, we may end up draining the reservoir pool, which is not good either,” said Negherbon. “Scenarios like this could be bad for fish, cause flooding, reduce recreation opportunities or reduce power generation.”

According to Ament, the assessment process is almost complete and the next step is to use the assessment data to make funding requests for priority projects. Other projects included in the assessment include dams in the Rogue River Basin and Willow Creek Dam. The District has already repaired regulating outlets at Blue River and Cougar dams and is in the process of repairing outlets at Fall Creek Dam.

Portland District is also upgrading spillway gates at many of its projects to ensure the dams function as intended. The Corps determined the spillway gates were a higher priority for replacement because of a high risk of failure.
Rangers share important message at Portland Boat Show

Tom Conning, Public Affairs Specialist and Monty Biggs, Park Ranger

Portland District park rangers stand at their booth with a tiny computer monitor, some swag and a clear message: wear your life jacket. Their booth may not receive the same attention as the gleaming boats surrounding them, but that doesn’t diminish the importance of their message.

The rangers were attending the annual Portland Boat Show. During the five-day event, they spoke with more than 1,400 attendees about water safety.

“The Corps is the nation’s largest provider of water-based recreation,” said Monty Biggs, who staffed the booth for three days. “While all this recreation and associated economic activity is fabulous, we can never forget that visitors have also lost their lives to drowning. We conduct outreach at events like the boat show because these deaths are entirely preventable.”

The District and rangers have several goals when attending these types of events: increasing personal floatation device wear, improving water safety awareness and increasing public understanding on safe transitions through the Columbia River locks.

“Most of our contacts at the boat show are brief, 30-second or so chats with folks on the importance of wearing a properly-fitted personal floatation device,” Biggs said. “I would say about a third of the more than 1,400 contacts we made at the boat show turned into an in-depth discussion about water safety.”

Personnel from the District attend boat, sportsman and other recreation-related shows throughout the region to inform the public about safe use of Corps facilities.