Irrigation Districts, In-conduit Hydropower & Fish Passage

**Oregon Water Resources Congress**
owrc.org

*Seeking a balanced solution to advance renewable energy projects while providing funding for meaningful fish passage restoration in Oregon.*

## BENEFITS OF IN-CONDUIT HYDROPOWER

Numerous irrigation districts and other agricultural water suppliers are interested in developing in-conduit hydropower projects to help offset energy costs using existing water rights and delivery systems. Hydropower projects are often part of larger district infrastructure and conservation projects, with the projected revenue used to help pay for the costs of construction. Also, the increased water conservation and efficiency from the related piping and lining projects leads to more water instream for fish and wildlife.

## WHAT IS IN-CONDUIT HYDROPOWER?

In-conduit hydropower projects use technology that is installed in a water delivery canal or pipeline to generate electricity using water that is already being diverted for an approved beneficial use. These projects do not use additional water beyond the amount that the water delivery system operator is already allowed to divert under its existing water right. Recent advances in hydropower technology have resulted in more viable options for agricultural, municipal, and industrial water suppliers and users to pursue inconduit hydropower in Oregon. Additionally, efforts at the federal level to promote small-scale and in-conduit hydropower will lead to even more interest in developing these types of projects in Oregon.

### About OWRC

The Oregon Water Resources Congress (OWRC) is a nonprofit association representing irrigation districts, water control districts, improvement districts, drainage districts and other agricultural water suppliers. These local government entities operate complex water management systems, including water supply reservoirs, canals, pipelines, and hydropower production. OWRC has been promoting the protection and use of water rights and the wise stewardship of water resources on behalf of agricultural water suppliers for over 100 years.

In-conduit hydropower is:
- A Renewable, clean source of energy;
- Installed in a screened canal or pipe;
- An efficient use of an existing water right for a supplemental use without negative impacts; and
- A key strategy to help Oregon meet its renewable energy goals.

## BARRIERS TO IN-CONDUIT HYDROPOWER

The barrier to these extremely beneficial projects is that the Oregon Department of Fish and Wildlife (ODFW) has placed the burden of restoring fish passage on all hydropower applicants, regardless of whether the proposed project will impact fish and wildlife. In 2007, an expedited water right application

Steve Johnson, District Manager with the Central Oregon Irrigation District, giving a presentation on his in-conduit hydropower project to other interested district managers.

**Stay Informed** → **Please contact April Snell, 503-363-0121, for more information about any of these issues.**

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Arnold Irrigation District's fish passage and screening.

process for in-conduit hydropower projects was created to allow these beneficial types of projects to move forward, using ORS 543.765. Even though the expedited process is simpler than the process that a large hydropower project has to undertake, there are still several complex steps and strong environmental standards in place that applicants must meet. In order to use the expedited hydroelectric water right application process through the Oregon Water resources Department, the applicant must have:

- An existing water right that has been utilized for beneficial purposes within the last 5 years;
- A working screen at the point of diversion where the water enters the canal or pipe; and
- An exemption through the Federal Energy Regulatory Commission (FERC) (which in itself is complicated, costly, and time consuming).

However, ORS 543.765 did not clarify under what circumstances ODFW can require fish passage and the imposition of overly burdensome requirements on in-conduit projects has resulted in virtually no new in-conduit projects in the past several years.

## FISH PASSAGE ISSUES

Placing the burden of addressing fish passage on in-conduit hydropower project applicants is problematic for several reasons. The biggest issue is that restoring fish passage can be extremely expensive, the standards are highly variable, and funding is difficult to obtain at the state or federal level.

For OWRC district members, fish passage is particularly problematic because:

- Many of the fish passage barriers that are in place were built or are owned by other entities;
- Districts often do not own the barrier so have not considered it to be their responsibility to build or fund the fish passage;
- Lack of feasibility studies or preliminary design for estimating of the costs for fish passage;
- Fish passage standards (size, type, and cost) are constantly changing; and
- Fish passage requirements are imposed after the project has been fully designed; and
- The cost of fish passage is extremely expensive.

Also, because the revenue generated from inconduit hydropower accrues gradually over time, districts and other project applicants do not have the money upfront to pay for fish passage. Furthermore, the fish passage requirements are imposed after the application is submitted, which means that all of the cost-benefit, engineering, and other analyses do not include the cost of fish passage.

Installing a turbine or other hydroelectric technology into a pipe or canal has no negative impacts on the waterway where the water is diverted from and often the fish passage barriers are many miles away from the proposed project. Asking an individual district or other in-conduit hydropower applicant to shoulder the burden of removing barriers to fish passage is inequitable, inefficient, and most instances results in the project not moving forward. The result is that no new renewable energy is generated, the fish passage barrier remains unaddressed, and all other potential environmental and economic benefits are lost. This is a missed opportunity not only for the project applicant but the state as a whole.