

Native Salmonid Conservation Facility

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Located amid the serene, forested landscape of Usk, Washington, the \$27 million Native Salmonid Conservation Facility is Seattle City Light's latest effort to protect and establish self-sustaining, naturally producing, threatened Westslope cutthroat trout in the Pend Oreille River watershed. The state-of-the-art facility captures genetically pure fish from the basin's tributaries, spawns them and returns the progeny to the natal streams as eyed eggs, unfed fry, and fingerlings. Prior to reintroduction, non-native species that suppress WCT populations are eradicated. The facility segregates fish into different holding containers based on their geographic origins to preserve genetic traits.

More than just breeding fish, the new facility rescues trout from local streams and nurtures them with advanced aquaculture techniques, bringing propagated wild trout of various sizes back to their native environments and increasing their chance of survival. With their historic numbers plummeting 90% in the West, these fish indicate watershed health and were nearly added to the Endangered Species List. Eventually, the hatchery will also raise the endangered, native bull trout or mountain whitefish.

The project team overcame significant challenges, including replacing a dam, proving the site's domestic water supply would not impact Skookum Creek, shallow groundwater that required constant pumping to construct build foundations, a remote and undeveloped location, and extreme weather conditions.

Completed on budget and on schedule, the May 29, 2024, ribbon cutting marked more than just the facility's opening; it celebrated a symbiotic hope, anchored in partnerships, and a vision for sustainability.



Project: Native Salmonid Conservation Facility | Usk, Washington
Entrant: HDR | Gig Harbor, Washington
Client: Seattle City Light | Seattle, Washington



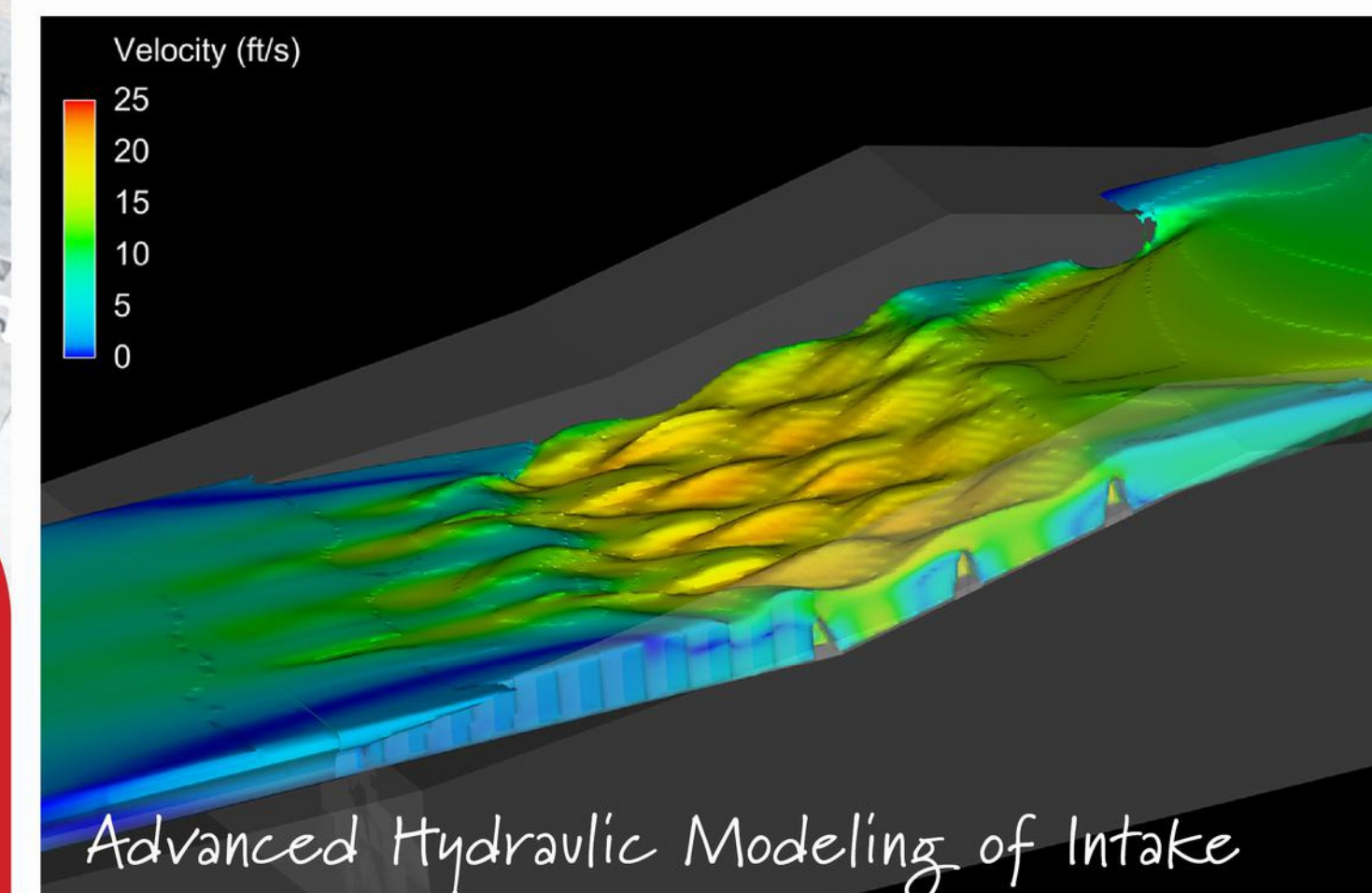
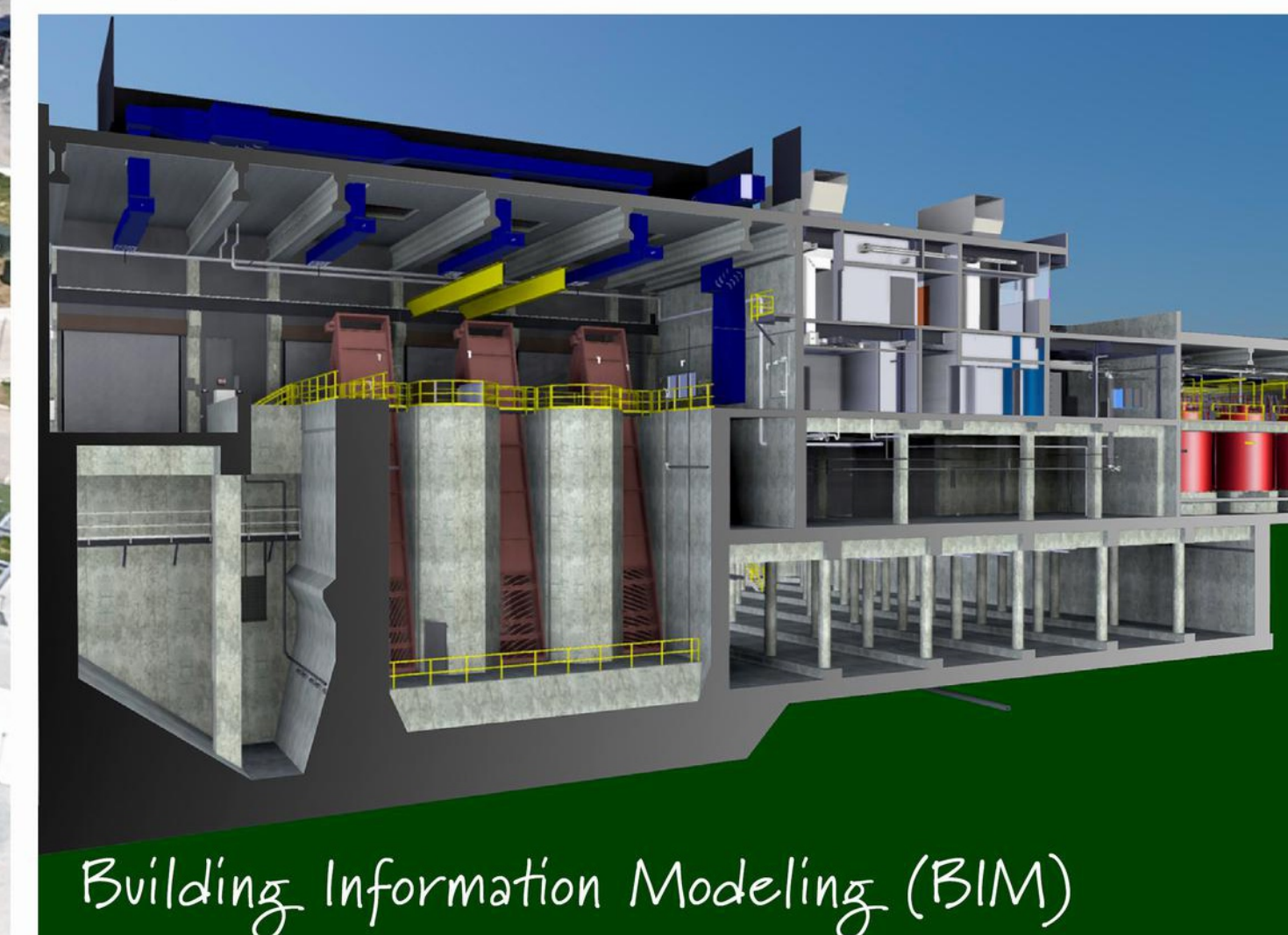
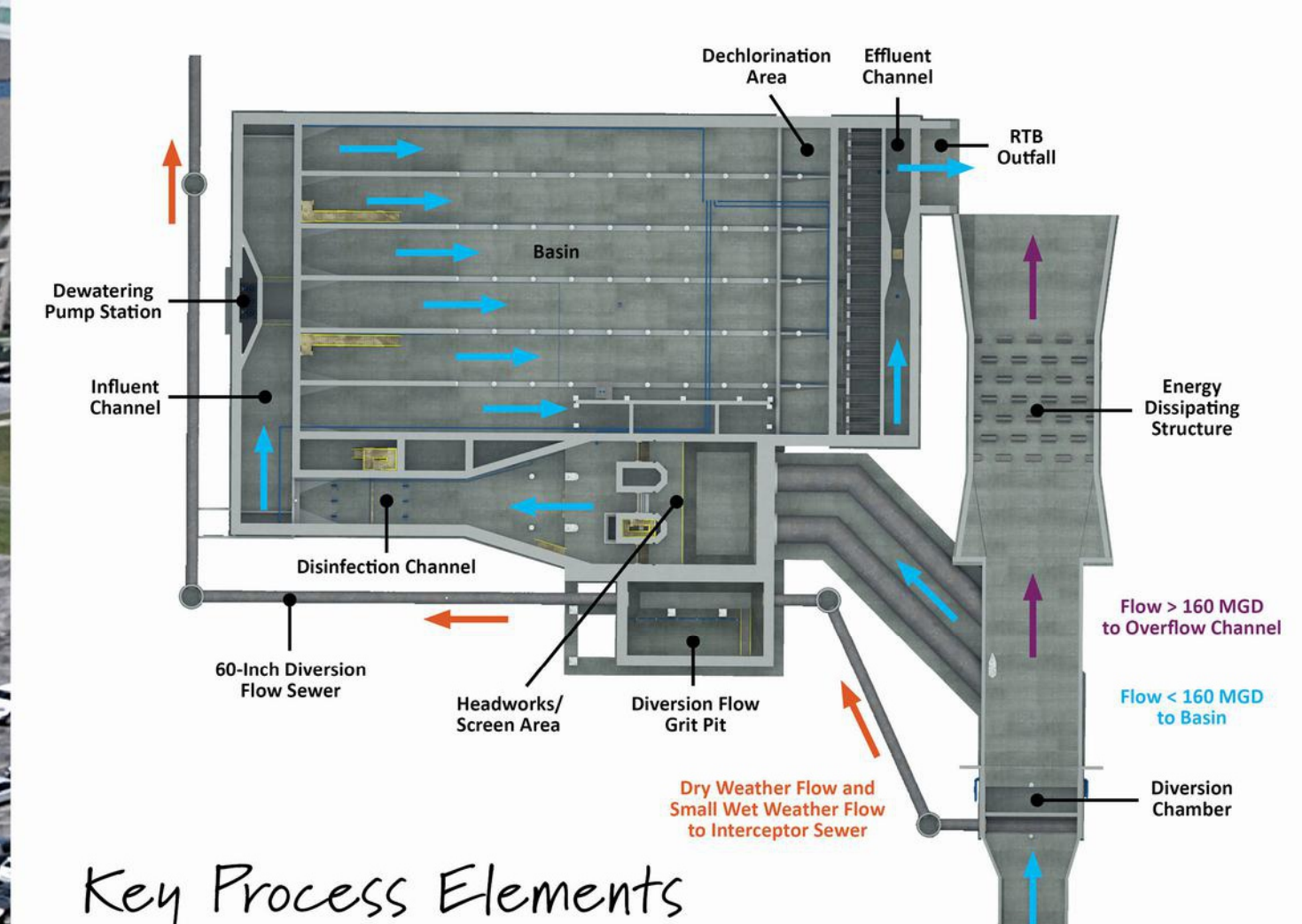
SADDLE CREEK HIGH RATE TREATMENT BASIN

The Saddle Creek High Rate Treatment Basin (HRTB) is a novel combined sewer overflow (CSO) storage and treatment solution to improve water quality. Its completion marks the halfway point in the City of Omaha's Clean Solutions for Omaha program to reduce the impacts of CSOs on local waterways by 2037. During storm events, the 3-million-gallon, underground, concrete basin is capable of providing "equivalent to primary" treatment of flows up to 160 million gallons per day (MGD) before discharging to the Little Papillion Creek.

Since wet weather is highly variable, the HRTB was designed to operate efficiently and effectively over a wide range of conditions without adversely affecting the collection and treatment system. Sited on a former construction debris landfill, the HRTB's innovative design was achieved through facility configuration, siting, hydraulic design, flow measurement techniques, and control processes. The \$94.5-million project protects public health and the environment, establishes the first remote high-rate treatment facility in Nebraska, and aesthetically complements the highly developed surrounding area.

PROJECT HIGHLIGHTS

- Gravity-flow-through design eliminated need for major pump station, reducing energy use and operational costs
- Advanced hydraulic modeling validated design would provide solids and floatables control, and disinfection of peak flows with a minimum of 30 minutes of settling time
- Sophisticated disinfection and dechlorination system confirms appropriate chemical dosing to meet effluent water quality permit limits
- Flow management optimized using real time controls and smart sewer technology
- Constructability challenges of confined landfill site addressed with excavation and deep foundation support systems for massive concrete structure



PROJECT: Saddle Creek High Rate Treatment Basin, Omaha, NE
OWNER: City of Omaha Public Works Department, Omaha, NE
FIRM: Wade Trim, Omaha, NE



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The Brightline Florida East-West Connector completes the 235-mile Orlando-to-Miami route, the first modern privately owned and operated intercity passenger railroad in the U.S.

The new mobility option revolutionizes regional travel by linking city pairs that are too close to fly and too far to drive. In Florida, passengers can board Brightline at Orlando International Airport (MCO) and travel to Miami in as little as 3 hours and 25 minutes, meeting or beating the convenience of passenger vehicle travel. The East-West Connector comprises 32 bridges, grading, drainage, communications, signal layout and utility relocation. The grade-separated tracks carry trains traveling up to 125 mph and are designed for speeds up to 150 mph as technology advances.

Delivered on time in fall 2023, on budget and to the owner's great satisfaction, the completed East-West Connector holds local, regional and national significance:

- Marks the beginning of a new private rail industry and offers a blueprint for expanding the U.S. rail market into higher-speed service
- Achieves North America's first use of box-jacking under an active highway system
- Reduces congestion and improves air quality by helping Brightline remove 3 million vehicles from Florida's highways annually, equal to 72 metric tons of CO2 emissions

Brightline Florida ushers in a new regional transportation mode and a model for passenger rail travel in the United States.

REIMAGINING RAIL

BRIGHTLINE FLORIDA EAST-WEST CONNECTOR

Cocoa to Orlando, Florida

CLIENT: Florida East Coast Industries, Fortress Investment Group

FIRM: HNTB Corporation | Lake Mary, FL

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HNTB

