

CASE STUDY

IPC Partners with Canton Hydro

# Solving the Development Challenges of a Small-Scale Hydroelectric Project



*A view of the Upper Collinsville hydropower plant on the Farmington River in Canton, CT.*

When Inclusive Prosperity Capital, Inc. (IPC) partnered with developer, Canton Hydro, LLC, and site owner, the Town of Canton, Connecticut, they were able to bring to completion a new run-of-river hydroelectric dam to the historic location of the Upper Collinsville Dam on the Farmington River, previously a conventional dam. Small-scale infrastructure projects like this have historically faced almost insurmountable funding and development challenges, but with the help of dedicated financing partners like IPC, Canton became the site of a new, cleaner source of energy and a more ecologically sustainable dam.



## Why Canton Hydro?

Small-scale run-of-river hydroelectric projects such as Canton Hydro have been challenged in recent decades by a range of obstacles that have prevented their funding and progress. A lack of suitable sites, experienced developers, technical expertise, and flexible sources of capital, combined with perceived liability and production risks, have created prohibitively challenging barriers.

Consequently, few lenders are willing to work on such complex, small-scale projects, and established financing has been slow to manifest.

In the Northeast, long-abandoned manufacturing facilities that historically relied on hydropower are strong candidates to repurpose into modern clean energy generation projects. Recently, the federal government has recognized such resources as candidates for future green investment through the Hydroelectric Incentive Program, which was expanded under the Bipartisan Infrastructure Law. This change is opening the door for dedicated investment partners like IPC—who focus on long-term capital—to make these small-scale green energy projects possible.<sup>1</sup>



*A group tours the new facility during the public ribbon-cutting ceremony on May 20, 2023.*



*From left to right: John D'Agostino, Inclusive Prosperity Capital; Mariana Cardenas Trief, Connecticut Green Bank; Claus Meier, Canton Hydro, LLC; Gabrielle Piasio, formerly Provident Bank; Armin Moehrle, Canton Hydro, LLC; Isabella Wagner, WWS Wasserkraft.*

## Partners in the Canton Hydro Project

Inclusive Prosperity Capital partnered with Provident Bank as senior lender to provide permanent financing for this project. The Connecticut Green Bank also provided construction and permanent financing and a credit enhancement to entice the senior lenders into the deal.

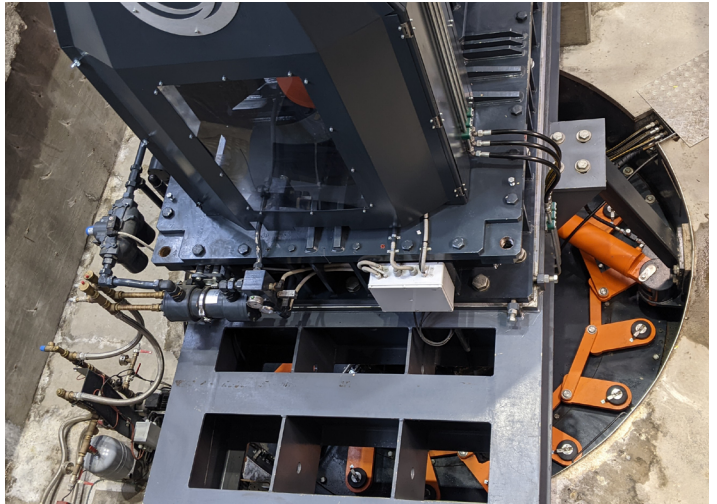
Canton Hydro LLC was the developer for this project, chosen by the Town of Canton through a competitive bid process. Its principal partners, Claus Maier and Armin Moehrle, have more than 20 years of



engineering and project development experience and previously co-developed two hydroelectric projects in Vermont. The primary contracting partner was Concrete Contracting Construction Incorporated.

### **A Historic Location: the Collins Company**

Canton Hydro's new dam sits on the historic site of the Collins Company, which was once the largest axe manufacturer in the world. The company's original dam, constructed in 1867, powered their manufacturing facility, which was shuttered in 1966. The new dam repurposes elements of the original dam, including locating the project's new turbine and generator in the original 1935 brick powerhouse.



*The double-regulated Kaplan turbine and generator, which is housed within the historic 1935 brick powerhouse.*



*A look downriver over the dam's crest gate, which improves the turbine's efficiency and enhances recreational activities, such as kayaking, upriver.*

### **Free Movement of Fish & Aquatic Species**

Run-of-river hydroelectric dams have far fewer ecological impacts than traditional hydroelectric projects do, which rely on flooding enormous tracts of land to store vast quantities of water in reservoirs. With the new Canton dam, the flow of water is not stopped or mitigated, and fish and other water wildlife are now allowed free migration from one side of the dam to the other. The fish of the Farmington River now have access to the other side of the old Canton dam site for the first time in almost 200 years.

To support water wildlife migration in the river, the new dam includes upstream and downstream Denil fishway passages and specific facilities for eel passage.

### **3.2 Metric Tons of CO<sub>2</sub> Offset Annually**

The new one-megawatt Canton Hydro plant will generate enough clean energy to power about 500 homes and the energy produced is expected to offset 3.2 metric tons of CO<sub>2</sub> annually. To do this, the dam uses a double-regulated Kaplan turbine and generator, which began producing electricity in December 2021.



*Visitors tour the new facility, which includes a viewing window for aquatic wildlife in the river.*

A new low-level fish guidance barrier prevents fish from swimming toward the primary spillway and instead guides them directly to the entrance of the upstream fish passage. A viewing window allows fish to be counted as they migrate past.

### Improvements for Water Quality & Recreation

With the new Canton dam, both water quality and recreational activities are improved. Before entering the turbine chamber, the water is cleaned by a horizontal trash rake and an automatic cleaning machine. In addition, the installation of “crest gates” on the dam raise the river by about three

feet to maintain a steady flow of water through the power turbine, which has had the added benefit of enhancing kayaking and other recreational river activities above the dam.

### IPC is Committed to Filling Gaps in Green Funding

IPC is dedicated to advancing small-scale green energy infrastructure projects like this run-of-river dam to bring clean energy and its benefits to communities. Without dedicated partners like IPC, underserved and hard-to-underwrite projects like this one would otherwise face almost insurmountable funding and development challenges.

#### Project Highlights



##### Project type

Run-of-River  
Hydroelectric dam



##### Location

Canton, CT



##### System size

1 MW



##### Project partners

The Town of Canton  
Connecticut  
Green Bank  
Provident Bank



##### Loan type

Project Finance



##### Loan amount

\$1.94 million



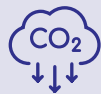
##### Project energized

2022



##### Projected lifetime energy production

85,659,320 kWh



##### Projected lifetime GHG reduction

66,916 tons



##### EPC & O&M provider

Wasserkraft

**Virtual Net Metering**  
State of Connecticut,  
Department of Energy  
& Environmental  
Protection

<sup>1</sup>Source: [www.energy.gov/eere/articles/us-department-energy-distributes-135-million-support-record-number-hydroelectric](https://www.energy.gov/eere/articles/us-department-energy-distributes-135-million-support-record-number-hydroelectric)