

CASE STUDY

Managing Multiple Partners on a Major Wastewater Revamp

When the Village of Frankfort, Illinois, decided to combine its three wastewater treatment plants into one regional WWTP, it hired four engineering firms to design the elements of its wastewater treatment consolidation plan, with the understanding that coordination would be critical to getting the job done.



Challenge

After a planning process that carefully examined 20-year operational cost forecasts and weighed several options, the Village of Frankfort decided to consolidate its wastewater operations from three existing treatment plants to one. The plan meant the Village needed to demolish its two smallest wastewater treatment plants (WWTP), expand the remaining plant, and construct three pump stations, force mains and sanitary sewer to transfer all flows to that expanded plant.

Implementing that multi-million dollar objective for its 18,000 residents was a complex undertaking but was more cost-efficient in the long term than continuing to operate and maintain all three plants.

Project Stats

Client

Village of Frankfort

Location

Frankfort, Illinois

4

ENGINEERING FIRMS
TO COORDINATE

33%

INCREASE IN
WASTEWATER CAPACITY

10%

BUDGET SAVINGS



Figure 1: Construction of new West Pump Station at old West WWTP.

Solution

With four engineering firms selected to design various elements of the consolidation effort, the Village brought in Burns & McDonnell to serve as program manager. We quickly saw opportunities for the Village to save time and money by organizing the consolidation concept into a program with specific projects identified and slotted into a comprehensive schedule to better coordinate between work on seven separate construction contracts.

With the engineering design firms and construction contractors working around a single site, clear communication and close coordination were paramount to success. We facilitated coordination among the numerous consultants and contractors, the Village, regulatory agencies, property owners, utilities and other interested parties. We also provided construction management services, including project schedule tracking, budget tracking and coordination of field changes with the design team and other contractors.

From the initial development of design aspects through the successful construction work for the expanded regional WWTP, we brought our comprehensive perspective to delivering a complicated program from start to finish. Acting as an extension of the Village's staff, we helped obtain more than 25 permits and worked to secure project financing through the Illinois EPA's State Revolving Fund (SRF) loan program for three separate loan packages.



Figure 2: Construction of new aerobic digesters at Regional WWTP.

Results

The expansion of the regional WWTP increased average daily capacity from 3.5 million gallons per day to 4.67 MGD. Expansion elements included oxidation ditch improvements, new aerobic digesters, a new centrifuge and biosolids handling equipment, dewatered biosolids storage facilities, tertiary filter improvements, ultraviolet disinfection system improvements, and two new excess flow storage ponds.

Construction began in 2017 and the project was completed in 2021. The program was delivered 10% under budget at a total cost of approximately \$55 million. The efficiencies gained through careful coordination helped the Village of Frankfort stay on schedule and save money along the way without compromising the overall design.

About Burns & McDonnell



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