

Wastewater Treatment Through Regionalization

Community Context

Located about 30 miles southeast of Iowa City along the Iowa River, Columbus Junction is a relatively large town for southeastern Iowa with a population of 1,900. While much of rural Iowa suffers from population loss, the Columbus Junction urban cluster has the potential for population growth because workers -mostly Hispanic- are coming to the area to work in an IBP meat packing plant established in the early 1990s. Aside from the packing plant, the employment base of the region is based on small industrial production and food processing industries both in Columbus Junction and in neighboring Muscatine County. This same workforce provides growth potential for the neighboring communities of Fredonia and Columbus City.

Fredonia and Columbus City are located in Louisa County, Iowa, and they are adjacent to Columbus Junction. (See Figure 1.) Located just across the Iowa River to the east, Fredonia is a small, rural community of 251 people. Fredonia is mostly White, with a significant Hispanic population (31 percent), and some Native Americans. An income survey in 2002 indicated that the median household income was \$20,000. Columbus city is a slightly larger rural community of 375. Slightly less than 30 percent of the town's population is Hispanic. More than 60 percent of the community is low-income and the estimated median household income at \$23,000.

The Iowa Department of Natural Resources (IDNR) received complaints regarding discharge of untreated sewage from Fredonia and Columbus City. This was particularly problematic in Fredonia, where community members draw water from shallow, sand-pit wells that are particularly vulnerable to contamination of this kind. After investigating these complaints, the IDNR determined that these discharges did exist and issued notices of violation for correction. Since both communities are very small, affordable wastewater treatment options were limited.



Fredonia is located across the Iowa River, east from Columbus Junction. Columbus City is located just south of Columbus Junction.

The Organization

Since each of these communities lacked the economies of scale and management capacity to justify construction and maintenance of a wastewater treatment system, the IDNR asked the Midwest Rural Community Assistance Program (RCAP) affiliate (the Midwest Assistance Program) to assist in resolving the effluent problem. The RCAP technical assistance (TA) provider, H. B. Calvert, met with both communities to develop a plan of action to address these issues. Mr. Calvert helped establish a committee consisting of representatives from the city councils and the county to address the wastewater problems from a regional standpoint. The meetings involved representatives of all three municipal entities, including the town attorneys, the mayors, and the city clerks, as well as representatives of the county and regional planning offices.

While Columbus Junction was willing to provide wastewater services, the representatives of Columbus City and Fredonia were concerned that regionalization would lead to loss of local autonomy. The meetings helped to clarify that a regional approach would make the most sense for all parties from an economic and management capacity perspective. They also helped assure that over time the regionalization

The TA provider also assisted the community representatives in securing funding. He carried out income surveys in each of the smaller communities (Fredonia and Columbus City) and in so doing verified that the respective median incomes were lower than estimated in the Census. This allowed the communities to access certain kinds of moneys specifically designated for low-income communities would not become a de-facto annexation of the two smaller communities by Columbus Junction.

Through these meetings the communities also agreed to work through an engineering firm, John Meyers of French-Reneker-Associates of Fairfield, Iowa, to carry out the preliminary engineering report. This report recommended that the communities of Columbus City and Fredonia construct wastewater collection systems within each city and then pump the wastewater to the Columbus Junction treatment facility, which was accepted by the committee. Since the study specified that the Columbus Junction facility would require renovations to improve its capacity to accept the extra waste load, both of the smaller communities agreed to provide financial assistance on a proportional basis to help with these renovations. Critical to the agreement between the three communities, the two smaller communities were able to protect their own autonomy—they pay for services, including maintenance, but are able to make their own decisions about expansion or contraction of that service.

Under intergovernmental agreements between the three communities and the county, the community representatives then began the process of securing funding for the project. The TA provider assisted in identifying funding sources, helping to bridge interests between the funding agencies and the local committee, and helping the community representatives to prepare the funding application package. The community secured a combination of loans and grants (described below).

Once the funding was secured, the project could begin in earnest. Final design and easements were secured. A treatment agreement with Columbus Junction was completed. Bid letting was completed and construction commenced.

As the project moved to the construction phase, Mr. Calvert and the committee began a series of community meetings. These meetings were intended to ensure that community leaders understood what to expect in the construction process. Since the town is heavily industrial, many workers work nights, so some residents are available during the days. In addition, the community representatives at these meetings regularly reported back on progress and upcoming issues at the town council meetings of the three communities. This provided a chain of communication between the project committee, community leadership, and the community at large.

The project was delayed to some extent by the need for dewatering. In situations with high ground water, as trenches are excavated for the collection and transmission pipes, water that seeps into the trench must be pumped out. This dewatering process increases the construction time. Construction was, however, able to continue into the late fall due to the nice weather conditions.

Mr. Calvert assisted the community in handling minor complaints associated with construction, as well as the requirement for residents to connect to the new system. He also worked with Louisa County officials regarding arrangements for the connection of county residents who are adjacent, but do not live within the municipality of Fredonia.

One of the other critical phases of the project involved helping the communities to develop the appropriate ordinances to allow for management of the wastewater system. This was achieved through meeting with the town clerk, mayor, and attorney of each community and helping them to draw up the appropriate ordinances—including the development of a user ordinance and a user charge ordinance. Mr. Calvert also assisted the communities, their engineer, the regional planning commission, and USDA Rural Development (RD) staff with the development of operational plans, and other documents relevant to operating and maintaining a wastewater system, including the development of an operational plan for the city.

Project Completed—Resources Used

The RCAP TA provider assisted the communities in obtaining project funds in the form of loans from the USDA RD and the Iowa State Revolving Loan Fund, as well as an EPA Hardship Grant and Community Development Block Grants (CDBG). Final design and easements were also secured. The total project cost was estimated at 3.2 million dollars. It is notable that Fredonia and Columbus City accessed resources in different amounts from different sources. Only Fredonia was eligible for grant funding from USDA RD. (See Table 1 and Table 2.) Columbus Junction received an RD loan of \$915,000, which enabled them to upgrade the capacity of the wastewater system to handle the additional waste from Fredonia and Columbus City.

Table 1: Fredonia Leveraged Financing to Support Project

Financing Source	Type of Financing	Amount	Date Approved
USDA RD	Loan	71,900	03/01/00
USDA RD	Grant	70,100	03/01/00
CDBG	Grant	347,000	03/01/00
EPA Regional Hardship Grant	Grant	335,000	03/01/00
SRF	Loan	196,000	03/01/00
TOTAL		1,020,000	

Table 2: Columbus City Leveraged Financing to Support Project

Financing Source	Type of Financing	Amount	Date Approved
USDA RD	Loan	252,000	03/01/00
CDBG	Grant	279,000	03/01/00
Regional	Grant	502,000	03/01/00
SRF	Loan	232,000	03/01/00
TOTAL		1,265,000	

Community Impact

This project has had significant impacts on both of the small communities involved. First, it has provided wastewater treatment for both communities. This has had a critically important public health impact—especially on Fredonia, whose residents draw their water from shallow individual wells. Second, the communities have experienced improved financial ratings, which can lead to financing for housing development in these communities. Third, the interaction between the leadership in the small communities and Columbus Junction helped to promote more

professional community management styles. Fredonia and Columbus City have adopted some of the financing and administration techniques of Columbus Junction. Fourth, the smaller communities have recognized that regional approaches to infrastructure do not have to imply loss of autonomy, and are thus more likely to entertain this option for other infrastructure challenges. Columbus City, for instance, has since connected to Columbus Junction for water service as well as wastewater.

Organizational Impact

At the local level, the project led to improved cooperation between Columbus Junction, Columbus City, and Fredonia. This collaboration has led to additional initiatives for joint planning among the three communities. The smaller communities have benefited from having their leaders interact and learn skills in town management from working with the more professional officials from Columbus Junction. It also helped the officials from Columbus Junction to better recognize and be sensitive to concerns of their smaller neighboring communities.

This project has encouraged the RCAP TA provider and others in Midwest RCAP to consider regionalization as a strategy for small systems. Mr. Calvert now looks at the potential for regionalization in other communities he works with. The funding agencies, the IDNR, EPA Region VII, and USDA RD, are also increasingly viewing regionalization as an option for improving water protection and wastewater treatment. The Fredonia, Columbus City, and Columbus Junction regional wastewater initiative has been a successful project for all three of these agencies.

Lessons Learned

A critical lesson from this case is that regionalization will work and have multiple benefits when it is voluntary. A corollary is that the key piece in making regionalization work, even when the larger organization/municipality is a willing participant is to design a process that allows for voices, concerns, and questions by each of the stakeholders to be discussed and answered from the beginning of the process. This case demonstrates a multi-layered process where town representatives, town councils, and

ultimately citizens were included in the decision making process. It also demonstrates that, when this process is in place, concerns about loss of local autonomy and self-identity, among others, can be addressed early in the process and addressed in the organization process through contract design, planning, and ordinance structure.

The role of the TA provider is also critical here in providing leaders and citizens in the three communities with information and alternatives—including information about costs and benefits of different options for addressing the effluent problems. The information provided by Mr. Calvert in this case ensured that the initial decision to move forward with a regional approach was made on the basis of information, rather than ideology or sentiments. It also elongated the scope of the discussion—helping stakeholders to view this as an investment that would impact the community for decades to come. It was clear from this perspective that the regionalizing with Columbus Junction would provide the greatest flexibility for future community expansion and growth.

The project also had multiple community benefits—in terms of opening planning and growth options for each of the smaller communities. In short, not only did a regional wastewater treatment approach solve existing environment standards compliance problem, but it also created relationships and opened

opportunities for addressing a range of other issues including drinking water, housing, and regional socio-economic planning.

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