

Michigan

MUNICIPAL REVIEW

May/June 2007

Inside:

The nuts and bolts of intergovernmental cooperation in Michigan

Decisions to collaborate in Michigan cities

Improving local government decision making:
Insights from local government officials

Supporting sustainable community growth
through regional cooperation

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The Commerce Township Wastewater Treatment Plant

Loren Crandell

Beginning as early as the mid-1950s, Commerce Township pursued means to provide sewer service to accommodate its growing population. Township leaders had long recognized the sensitive environmental features of the area, and understood that continuous, long-term use of septic systems posed a serious threat to the water quality of the numerous lakes and wetlands in the area. Furthermore, these lakes and wetlands are at the headwaters of the Huron and Rouge Rivers.

Commerce Township felt the best solution to its growing need for sewers was to be included in a cooperative, regional sewer collection system. Despite its efforts, however, Commerce had been excluded from all area-wide sewer plans, primarily due to the widely held perception that if they installed sewers, rapid and dense development would occur, furthering urban sprawl.

As we now know, the development occurred anyway, to the extent that the township, including the Village of Wolverine Lake, reached a population of 27,000 by 1990. In addition to the 11,000 residences developed by that time, numerous non-residential developments and institutions were attracted to the community. All of this development depended on septic systems or small wastewater treatment plants, all of which discharged effluent (water mixed with waste matter) into the groundwater.

Soil conditions throughout most of Commerce were such that the Oakland County Health Department was compelled to issue septic system permits. Unfortunately, most septic systems do not function indefinitely, and without available sewers, the Health Department was faced with the option of issuing system replacement permits or



The redbreasted dace is an endangered species of fish in Michigan. Effluent from the Commerce Township Wastewater Treatment Plant is expected to actually extend and increase the fish's available habitat.

condemning existing homes and businesses.

One solution to benefit multiple communities

Faced with this growing problem, and being prevented from connecting to any regional sewer system, in 1988 the township undertook an intensive, multi-municipal effort to provide sewer service. A task force – led by the township's lawyers at Adkison, Need & Allen and their engineering consultants Giffels-Webster Engineers – investigated all possible options for wastewater treatment, including constructing a sewer all the way to the City of Pontiac wastewater treatment plant 15 miles away.

After thorough studies and discussions with Oakland County and the Michigan Department of Natural Resources (DNR) officials, it was determined that the most viable solution was for Commerce to acquire and enlarge an existing one-million gallon-per-day (MGD) wastewater treatment plant. This plant had been constructed by a developer under permits issued in 1984 by the DNR and was financed with private funds. The plant's effluent discharges into the Seeley

Drain, located at Haggerty Road just north of Thirteen Mile Road.

In June of 1988, the Michigan Water Resources Commission issued a permit to Commerce Township to expand this plant to 5.0 MGD and to discharge the effluent into the Seeley Drain at the original discharge point. It was anticipated that this 5.0 MGD capacity would be sufficient to accommodate the ultimate wastewater treatment needs of Commerce Township and the Village of Wolverine Lake. This included the 11,000 existing homes, and also took into consideration an additional 5,000 homes in future development as well as existing and future non-residential uses. Also, Commerce Township and the City of Novi entered into an agreement where 2,000 dwelling units in the northeast part of the city would be served by Commerce. In turn, 2,000 dwelling units in the southwest part of Commerce Township would be served by Novi/Walled Lake.

After obtaining the 5.0 MGD permit, Commerce Township constructed 15 miles of trunk sewers and 10 pump stations, and completed plans and specifications for the addition. The township's invest-

ment by 1993 was in excess of \$20 million.

White Lake Township has a somewhat similar history of growth without sewers for basically the same reasons as Commerce Township. The 1990 population of White Lake had reached 22,000. Residential and non-residential developments had occurred using septic systems and small wastewater treatment plants. Failures of these systems were occurring on an increasingly frequent basis. In 1990 three wastewater treatment plants serving a total of 600 homes were cited by the DNR for non-compliance with effluent-quality permit requirements. It was at this point that White Lake began an intense effort to provide municipal sewer services for existing homes and businesses. After studying all alternatives, it became apparent that the most viable option was to join with Commerce Township.

In early 1991, Commerce Township was asked by the Surface Water Quality Division of the DNR and the Oakland County Department of Public Works to consider an additional expansion of the Commerce treatment plant to provide 3.5 MGD capacity for White Lake Township.

Possible impact to endangered species of fish

At this point, Commerce directed its consulting engineers to conduct a study of the impact of the proposed effluent discharge on the redbside dace, an endangered fish species. Dr. Thomas Coon, a noted fish biologist and professor at Michigan State University, and Steve Gough, a highly respected stream geomorphologist were enlisted.

Dr. Coon completed a search of all known data related to habitat preferences of the redbside dace. He also created a model using software developed by the U.S. Fish and Wildlife Service to predict the impact of the additional flow on the habitat for the fish. He concluded from his studies that an increase in



Construction of the Commerce Township Wastewater Treatment Plant is expected to be complete in early 2009. With a capacity of 8.5 million gallons per day, it will serve the needs of Commerce Township, White Lake Township, the Village of Wolverine Lake, and a portion of the City of Novi.

the stream flow would enhance and increase the habitat for the redbside dace.

Steve Gough analyzed the existing stream channel and predicted that increased flows in the magnitude anticipated would not cause erosion of the channel. In fact, Mr. Gough indicated that the increased

velocities at lower flows may have the beneficial effect of washing sediment deposits off of gravel beds that are essential to the fish's spawning.

Because of continuing concern on the part of some DNR staff, the Michigan Endangered Species Fish Technical Advisory Committee was

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convened and presentations were heard from Dr. Coon, Steve Gough, Giffels-Webster and DNR biologists. The committee concluded that the reaside dace was under immediate threat by urbanization and planned highway construction in the vicinity, and that the proposed wastewater effluent would actually extend and increase the available habitat.

Moving forward into a new century

With the issue of the reaside dace resolved, Commerce moved forward with its plans to increase the treatment plant's capacity to 8.5 MGD. The Michigan Department of Environmental Quality has issued the required permits and plant design is underway with construction expected to be com-

plete in early 2009. This capacity is enough to handle the current needs of Commerce Township, White Lake Township, the Village of Wolverine Lake, and a portion of the City of Novi, as well as the future growth of these areas. An additional agreement between Commerce and Farmington Hills has also become part of the story, as a result of the Seeley Drain flowing into Farmington Hills at a downstream point. This agreement assures the plant will be operated in the safest way possible, and that the effluent that flows toward Farmington Hills will be the highest quality permitted by available technology.

The Commerce Wastewater Treatment Plant was roughly 40 years in the making, and through the township's leadership and cooperation with surrounding

communities, a benefit has been established for generations of people who live and work in the area. Discussions are now underway between Commerce and its neighbors to plan a parkway or some type of place for recreational activities along the Seeley Drain, and the spirit of cooperation that helped build the treatment plant will continue to have a positive impact into the future. ♦

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