

ES.1 Discussion

The City of Newark owns and operates the City of Newark Wastewater Treatment Plant. The City is authorized to discharge pollutants from the plant and combined sewer overflow (CSO) structures under a National Pollution Discharge Elimination System (NPDES) permit issued by the Ohio Environmental Protection Agency (Ohio EPA), Permit No. 4PE00001*GD.

In the City's current NPDES permit effective October 1, 1995, the Ohio EPA required that a Combined Sewer System Long Term Control Plan (LTCP) be completed by October 1, 1998.

In accordance with the Ohio EPA's CSO Strategy, an extensive program was started in early 1996 to estimate the effects of CSOs (if any) on the water quality of streams in the Newark area. This program included the following elements:

- ▶ An aquatic life study of Newark area streams to assess their attainment of water quality standards. The aquatic life study was used to focus the attention of the LTCP on areas where apparent water quality impairments had been identified. The only apparent water quality impairment previously identified was in the North Fork Licking River (NFLR) at rivermile 0.1-0.2.
- ▶ A complete characterization of the combined sewer system tributary to the North Fork Licking River. This characterization was supported by field measurement of system flows and CSO discharges, rainfall measurement and CSO sampling. This data was used to develop and calibrate a hydraulic model of the combined sewer system.
- ▶ Sampling of Newark streams for fecal coliforms upstream and downstream of CSO discharges.
- ▶ Public Participation meetings to determine public concerns regarding the effects of CSO discharges on water quality and solicit opinions and ideas regarding existing stream uses and sewer rate cost implications.
- ▶ Sampling of stream sediment, river water, storm sewer discharges and combined sewer discharges to determine the cause of the apparent water quality impairment identified by the aquatic life study (i.e., NFLR rivermile 0.1-0.2).
- ▶ Toxicity testing of river water, storm sewer discharges and combined sewer overflows at the location of the apparent water quality impairment identified by the aquatic life study (i.e., NFLR rivermile 0.1-0.2).

ES.2 Conclusion

The program was started in 1996 to assess the potential effects of CSO discharges on water quality and was completed in the summer of 1998. As a result of these investigations, the City of Newark Combined Sewer System was found not to cause or significantly contribute to violations of water quality standards or impairment of designated uses. Thus, the City of Newark is a "Case 1" CSO community as defined in the Ohio EPA March 1995 CSO Strategy.

Although no water quality impacts due to CSOs were found, the City of Newark desired to be proactive in protecting the good water quality of its streams. Thus two areas of potential concern regarding the Combined Sewer System were identified:

- ▶ Protection of existing water quality attainment (Aquatic Life)
- ▶ Investigation of downstream fecal coliform sources

With these two goals in mind, the City of Newark Combined Sewer System Long Term Control Plan was developed and consists of the following items:

1. Implementation of Best Management Practices such as public education and storm drain stenciling.
2. Continued monitoring of the combined sewer system through flow monitoring activities.
3. Continued monitoring of the receiving stream using aquatic life studies of the stream.
4. Investigation of downstream fecal coliform sources between the City of Newark and the Dillon State Park beach.
5. Reclassification of the North Fork of the Licking River (between the confluence with the South Fork and the Manning St. bridge - Rivermile 1.6) from Warmwater Habitat to Modified Warmwater Habitat to reflect attainable water quality standards in this stream segment.
6. Continued implementation of the Nine Minimum Controls as outlined in the City's *Combined Sewer Overflow Operational and Maintenance Plan*

ES.3 Costs and Implementation Schedule

As discussed in more detail in Chapter 4, the activities included in the Long Term Control Plan amount to approximately 1.42% of the total 1997 revenue generated by the City of Newark Sewer Department. Some provisions of the LTCP are already included in the existing budget or can be implemented using existing forces and expenditures. Thus at this time it is not known if a rate increase will be required to implement the LTCP.

Figure 4-1 in Chapter 4 shows the implementation of the recommended plan over the next five years, assuming the plan is approved by January 1999.

ES.4 Compliance with Ohio EPA's CSO Strategy

The City's proactive approach matches well with the Ohio EPA's CSO Strategy. The Strategy requires a Case 1 community's Long Term Control Plan contain, at a minimum, monitoring and characterization of the Combined Sewer System and implementation of the Nine Minimum Controls. The City of Newark Long Term Control Plan meets these requirements:

Monitoring and Characterization:

The monitoring activities described below will verify water quality is protected and will support continued characterization of the sewer system:

- ▶ Continue periodic flow monitoring to measure flows within the combined sewer system and overflows to the river. This data will increase the City's knowledge of system operation, quantify overflows, and provide additional data for continued computer model development.
- ▶ Review future Ohio EPA aquatic life sampling in Newark area streams to verify CSOs are not affecting the aquatic life. Perform additional aquatic life studies as necessary to verify or further investigate CSO impacts.

Implementation of the Nine Minimum Controls:

The City of Newark has already successfully implemented the Nine Minimum Controls (NMCs) as documented in their *Combined Sewer Overflow Operational & Maintenance Plan*. The Long Term Control Plan employs the continued use of the NMCs to protect water quality as well as the following Best Management Practices:

- ▶ Expanded public education including presentations at public events and the distribution of brochures.
- ▶ Storm drain stenciling during the summer months of storm drains in both the combined and separate sewer systems.

In addition to the Case 1 community requirements listed above, the Newark LTCP includes two additional elements: reclassification of the North Fork Licking River and a Fecal Coliform Study of the Licking River downstream of the City of Newark.

Reclassification of the North Fork Licking River Between the Confluence and Rivermile 1.6

Although no CSO impacts on water quality were found, one area of apparent water quality impairment was identified. The aquatic life study found that the macroinvertebrates in the North Fork Licking River (NFLR) at rivermile 0.1-0.2 did not meet the designated aquatic life standard

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of Warmwater Habitat, resulting in a designation of Partial Attainment. This is in contrast to all other sites in the Newark area, including the site upstream on the North Fork, which were found in Full Attainment of Warmwater Habitat. These findings matched those of a 1993 sampling of aquatic life at the same sites by the Ohio EPA. The Ohio EPA concluded the impairment was due to upstream CSOs. However, in accordance with the Demonstration Approach, this study conducted additional sampling and reached a different conclusion.

The data collected during the development of the Long Term Control Plan, combined with a review of the stream habitat at the site, resulted in the conclusion that discharges from the City of Newark CSOs are not the cause for the Partial Attainment in the North Fork, rivermile 0.1. Instead, the partial attainment is likely due to a non-favorable habitat and unstable substrate at the site, both of which contribute to the slightly depressed state of the macroinvertebrate population found during the sampling. This conclusion is supported by the following:

- ▶ Extensive sampling in 1998 of stream sediment, river water, storm sewer discharges and combined sewer discharges found no direct cause of impairment to macroinvertebrates.
- ▶ The reach of the North Fork containing Rivermile 0.1 has been channelized and modified by the Army Corp of Engineers for flood control purposes as part of the Newark Local Protection Project from the confluence to approximately rivermile 1.6. The City of Newark is legally bound to maintain the channelization.
- ▶ Other similar streams in the area receiving CSO discharges did not exhibit similar reductions in attainment (South Fork Rivermile 0.1 and Raccoon Creek Rivermile 0.1 are both in Full Attainment despite CSO discharges). Both sites had better habitat scores than the North Fork at Rivermile 0.1-0.2.
- ▶ The substrate was found to consist of gravels, sands and other small material mixed with some larger rocks. Field observations during the sampling season indicated that materials tend to shift as peak storm flows are encountered. This shifting of the substrate disrupts sites and may prevent macroinvertebrates from colonizing.
- ▶ The reduction in pollution in the NFLR has failed to improve the macroinvertebrate scores, although the fish scores have improved dramatically. This shows something other than pollution is impacting the macroinvertebrates.

As a result of this conclusion, the Newark Long Term Control Plan requests that the Ohio EPA reclassify the North Fork Licking River between its confluence with the South Fork and the Manning Street Bridge (approximately Rivermile 1.6) from Warmwater Habitat to Modified Warmwater Habitat. It is the conclusion of this report that this reach cannot consistently support Warmwater Habitat for macroinvertebrates.

Fecal Coliform Study of the Licking River downstream of the City of Newark

As a result of input during a public meeting, the Long Term Control Plan includes a study of the impact of Newark CSOs on a downstream beach in Dillon State Park. Although it is believed this beach is not impacted by the Newark Combined Sewer system, the Long Term Control Plan includes this study in order to be proactive regarding the potential impact of Newark CSO discharges on the Dillon State Park beach.

ES.5 Compliance with Demonstration Approach - National CSO Policy

In accordance with the Demonstration Approach of the National CSO Policy, the City of Newark Combined Sewer System Long Term Control Plan (LTCP) provides the following:

- ▶ The LTCP is sufficient such that CSO discharges do not cause water quality violations nor impair the designated uses of Aquatic Life and Primary Contact Recreation.
- ▶ Known water quality impairments are attributed to a poor habitat and unstable substrate in the receiving water thus existing CSO discharges do not preclude attainment of water quality standards in this area. Furthermore, it is recommended that the site of impairment be reclassified from Warmwater Habitat to Modified Warmwater Habitat.
- ▶ The LTCP emphasizes Best Management Practices, including those already in the City's Combined Sewer Operational and Maintenance Plan, that will reduce pollutant discharges from the Combined Sewer System. The LTCP also recognizes the pollution reduction benefits already achieved by the City of Newark in projects that directly reduced CSO discharges to the North Fork.
- ▶ The continued monitoring included in the LTCP provides early warning of water quality problems or other changes in the system. The continued monitoring will allow the City of Newark to react quickly to preserve water quality and to address problems as they develop.

The City of Newark Long Term Control Plan commits the City of Newark to continued monitoring of the water quality in local receiving streams to verify existing water quality is maintained while implementing best management practices and additional studies to prevent future water quality degradation.

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