VIII. SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVE

A. Identify the Chosen Technical Alternative

The selected alternative which best meets the immediate and future wastewater treatment needs of Amity Township is Alternative 1 – Parallel Oxidation Ditch Train.

This would upgrade the wastewater treatment plant to a capacity of 2.90 MGD.

This selected alternative is based on the following:

1. Existing Wastewater Disposal Needs

An expansion of the Amity Township wastewater treatment plant was undertaken when the plant's capacity was increased from 0.8 MGD to 1.6 MGD. In 2005 the treatment plant was rerated to a capacity of 2.2 MGD.

As part of the plant's current capacity, the following municipalities send wastewater flow to the plant and have the noted reserve capacity.

Union Township	158,010 gpd
Earl Township	52,500 gpd
Douglass Township	210,000 gpd

Amity Township is allocated the balance of the 2.2 MGD capacity.

The plant's current average daily flow is 1.167 MGD per the 2009 Chapter 94 Report. Allocation and future flow projections established in Section

IV of this Plan show that the wastewater treatment plant will be approaching its capacity. Therefore, the Township will have a need for additional capacity to meet future flow requirements.

2. Future Wastewater Treatment Needs

The proposed project increases wastewater treatment plant capacity by 0.500 MGD. All but 4,200 gpd will be allocated to Amity Township. The 2.90 MGD projected design flow represents nearly a 24% design flow capacity increase.

Given that Amity Township predicts that it will exceed its allocated capacity, an upgraded facility will be necessary to meet future sewage disposal needs.

3. Operations and Maintenance Considerations

The selection of the alternative to implement a parallel oxidation ditch train is primarily based on efficiency and performance of the process as well as the ability to upgrade to handle permit requirements that will most likely become issues in the future (e.g. biological nutrient removal). In the event that these upgrades are needed, the upgrades required would be minimal relative to those required for Alternatives 2 or 3.

4. Cost Effectiveness

The opinion of probable cost, for the selected alternative, at $9,688,000, is the highest of all the alternatives. However, operating costs associated with this alternative are comparable to those in Alternatives 2 and 3.

Upgrades associated with this alternative provide a number of important advantages.

- The entire existing Equalization Basin would remain for handling of peak flows through the system (equalization).
- Both trains would utilize the same effective process. This would reduce the burden on the operators in terms of maintaining the performance of the system as a whole. It would also allow the facility to maintain commonality in spare parts.
- The proposed oxidation ditch process provides increased flexibility in operation and, with operational upgrades or expansion to a third channel, provides a ready alternative for future expansion or treatment upgrades (e.g. biological nutrient removal).
- The proposed oxidation ditch process has proven performance for the WWTP.
- The anticipated effluent quality out of the combined oxidation ditch trains is better than those through the secondary treatment trains proposed in the remaining alternatives.
- No additional effluent pumping requirements resulting in a reduction in the O&M costs associated with the lagoon in Alternatives 2 and 3.

5. Available Management and Administrative Systems

The Township currently has the necessary operations, maintenance, and administrative staff in place to manage the existing as well as upgraded facilities.

6. Available Financing Methods

Of the financing methods discussed in Section VI of the Plan, each method can provide the necessary funding for the selected alternative. Refer to Section VIII.B. for the selected capital financing plan.

7. Environmental Soundness

Environmentally, the proposed upgraded wastewater treatment plant will be able to adequately treat the projected flow needs and maintain permitted effluent limits.

B. Selected Capital Financing Plan

The selected alternative will be funded by Amity Township. The Township will consider financing the proposed upgrades via the use of capital improvement monies in combination with a municipal bond issue.