

8.0 JUSTIFICATION FOR SELECTED TECHNICAL AND INSTITUTIONAL ALTERNATIVES

The needs assessment identified the Bel Air Estates mobile home park as requiring immediate action, with evidence that the adjacent Valley Road area should also be included in any solution. Also, long term growth of the Township, and maintaining the goals of the Comprehensive Plan require the addition of capacity at the existing treatment plant to meet anticipated needs for the next ten years. Planned upgrades and modifications will improve plant operations, and allow for the plant to be re-rated to accommodate projected demand for the next ten years.

8.1 SELECTED TECHNICAL ALTERNATIVE

Tier II. To serve the Tier II area, five competing alternatives were evaluated:

1. Limekiln Interceptor, serving Bel Air Estates
2. Monocacy Interceptor, serving Bel Air Estates and Valley Road
3. Package plant, serving only Bel Air Estates
4. Package plant, serving Bel Air Estates and Valley Road
5. Community on-lot elevated sand mound or drip irrigation system for Bel Air Estates

Options 2 and 4 can also be phased, serving Bel Air immediately, and adding Valley Road at a later time. Options 1, 3 and 5 were discounted because they did not have the potential to serve the Valley Road area. There were technical concerns with Option 5 as well, particularly whether the soils were suitable without first performing expensive percolation tests. Therefore, the two feasible options were the Monocacy Interceptor (Option 2) and the Bel Air/Valley Road Package Plant (Option 4).

The Township has chosen Option 2, the Monocacy Interceptor, for the following reasons:

1. The option provided sewer to both Bel Air Estates and Valley Road.
2. There were no adverse environmental impacts.
3. The Township considers the area north of State Route 422, and west of Limekiln Road to be appropriate for development (particularly commercial development along Route 422), and extending sewer into this area would facilitate that development.

8.1.1 Existing Wastewater Disposal Needs

The Tier II study area showed a high percentage of malfunctioning OLDS. Soil types are generally poorly suited to on-lot disposal,² and along Valley Road, many of the lots are small, limiting the options for installing new drainage fields. Therefore, the only viable options are to construct a centralized collection system, and treat the sewage either on-site, or by

² Small pockets of Penn shaly soil exist on the site, which may be suitable for on-lot systems (with elevated sand mounds or drip irrigation). Most of the site is characterized by alluvial soils, or soils with a shallow hard pan that limits infiltration.

8.1.2 Future Wastewater Disposal Needs

Current plant capacity is inadequate to meet forecast demands over the next ten years. Planned upgrades and modifications to the plant will allow for re-rating the plant's capacity at a reasonable cost (compared to construction of a new facility, or pursuing other options). This will assure capacity for the additional connections from the Tier II area, as well as septage from the Sewage Management Program collections. See **Table 4-5** for growth projections.

The chosen option for the Tier II area will provide adequate capacity for current needs. On Valley Road, the sewer extension ends at the property line of a large (59+ acres), mostly undeveloped lot. A simple extension could easily serve additional homes on that tract.

8.1.3 Operation and Maintenance Considerations

Planned upgrades and modifications to the plant are aimed specifically at improving maintenance and operational efficiency.

The chosen option for the Tier II area will provide adequate capacity for current needs. On Valley Road, the proposed sewer extension ends at the property line of a large (59+ acres), mostly undeveloped lot. A simple extension could easily serve additional homes on that tract, and that additional area is included in the sewer service area.

The planned upgrades and modifications to the sewage treatment plant, and its anticipated rerating, will assure adequate capacity to handle anticipated growth for the next ten years.

8.1.4 Cost-Effectiveness

The chosen alternative to serve the Tier II area is not the lowest cost alternative. However, it is one of only two alternatives that will serve both the Bel Air Estates and Valley Road areas. The other alternative, the package plant, was less costly initially. However, the package plant has a shorter life expectancy than the sewer interceptor, and has ongoing operation and maintenance costs, which on a per-gallon basis, are significantly higher than treating the waste at the central treatment plant. The interceptor will also be able to serve expected commercial growth along the Route 422 corridor.

8.1.5 Available Management and Administrative Systems

No changes to the existing management and administrative systems are required as a consequence of this plan.

8.1.6 Available Financing Methods

Due to current low interest rates, the Township anticipates accessing a bank line of credit. The Township anticipates being able to borrow all necessary funds at a rate of less than 4%.

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8.1.7 Environmental Soundness and Compliance with Natural Resource Planning and Preservation Programs

All of the alternatives that were considered would have met necessary water quality requirements (including NPDES permits, if required). Other issues that were of concern were agricultural preservation, historical preservation, and protection of rare and endangered species. The last two were looked at, and none of the alternatives showed any conflicts with either (see 6.1.10 and 6.1.11). Agricultural preservation was a concern with both sewer options. The Limekiln Interceptor to Bel Air Estates would open areas currently being farmed to large-scale residential development. The Monocacy Interceptor would run through four properties that are currently being farmed. Two of those properties front on Limekiln Road, and are already in the sewered area. The other two could be developed, but the impact would be minor.

The chosen alternative, the Monocacy Interceptor, has no significant adverse impacts on the environment, or with the protection or preservation of natural resources.

8.2 CAPITAL FINANCING

The favored option is to either borrow funds from a bank, or issue a municipal bonds. At the time of construction, the Township will evaluate which alternative is best, depending on rates at that time.

PENNVEST funding was considered, primarily because of the favorable interest rates. However, PENNVEST requires choosing the lowest cost alternative (or alternative within 10% of the lowest cost). The two lowest cost alternatives had negatives that precluded their choice.

8.3 IMPLEMENTATION SCHEDULE

The suggested implementation schedule for the proposed Monocacy Creek Interceptor is as follows. All dates are contingent on DEP approval in March 2004. Should that date change, all consequent dates will change accordingly.

Township adopts Act 537 Plan, submits to DEP	November, 2003
DEP Approval	May, 2004

Sewerage Alternatives: Bel Air Estates/Valley Road

Feasibility Study of Engineering Design	May, 2004
Obtain funding for the service area sewerage project	February, 2005
Prepare final design documents for bidding	October, 2004 - June, 2005
Obtain necessary easements and permits	March, 2005
Bidding of projects	July, 2005 - September, 2005
Construction	November, 2005 - November, 2006
Connect EDU's to collection systems	December, 2006 - May, 2007

On-Lot Sewage Management Program

The suggested implementation schedule, as measured from the implementation date of this plan, is:

Adopt Ordinance	August 2004
Notify affected residents of obligations	September 2004
Implement record keeping/tracking system	October 2004
Begin inspection program	October 2004
Complete first round of inspections	May 2005
Notify residents to begin pumping	June 2005