



MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION9500 Brunett Avenue
Silver Spring, Maryland 20901MCPB Date October 2, 2003
MCPB Agenda Item No. 1

September 26, 2003

MEMORANDUM

TO: Montgomery County Planning Board

VIA: Lester L. Straw, Superintendent of Parks
Michael F. Riley, Chief, Park Development Division (PDD) *MR*

FROM: Dilip Pandya, Project Manager, PDD *DP*

SUBJECT: Facility Plan for Pope Farms Nursery Utilities Upgrade Project

STAFF RECOMMENDATION

Staff recommends that the Planning Board approve the facility plan for Pope Farm Utility Upgrade Project.

PROJECT DESCRIPTION

The project includes a new waterline, sewer line, and drip irrigation system to serve the existing facilities at Pope Farm Nursery. The site is located at 7400 Airpark Road in Gaithersburg, Maryland.

PROJECT BACKGROUND

The Pope Farm began operation in 1974 to provide high quality herbaceous and woody plants in support of the development, maintenance, beautification and conservation of over 30,000 acres of Montgomery County parkland currently servicing a population of 850,000 local residents. The facility supplies the majority of trees, shrubs, annuals, perennials and interior plants for the park system. Current plant production includes new park installation and after-care, rehabilitation of older parks, environmental restoration, reforestation and production for park enterprise facilities and public gardens. The facility staff also hosts departmental and other special events and provides for the care of recently installed woody and herbaceous plant material. The internally organized Plant Selection Committee represents the needs of park, planning and development staff and determines annual production goals and species selection in the nursery and in the greenhouse.

The Pope Farm property is located in the Rock Creek Stream Valley at 7400 Airpark Road in Gaithersburg, Maryland. This particular site was selected for the nursery because of its central location in the county, gentle rolling, well-drained fields, and habitat for native species. The current Pope Farm site is comprised of approximately 60 acres in nursery production. Existing facilities consist of an office building; five heated greenhouses, 4 over-wintering houses, 3 equipment storage buildings, farmhouse and historic cemetery.

PROJECT JUSTIFICATION AND NEED

Current Condition:

Water- A two inch waterline serves entire facility and it is undersized, unreliable and continues to have numerous costly leaks to repair.

Sewer- Facility is served by an old, non-expandable septic system which is in close proximity to stream and wetlands.

Irrigation - Historically water has been stored in a 650-gallon and this tank has been towed to the field where the trees are to be irrigated. The water supply to the 650-gallon storage tank originates in the well or from the 2" city, water line. The tank is attached to a farm tractor by a draw bar and driven to the field. It may take up to two hours to fill the 650-gallon tank depending on the water pressure at the well, or the constantly fluctuating pressure in the 2" line. The change of pressure in the 2" line is a function of the re-occurring leaks in it. Once the irrigation water has arrived by tractor to the field where it is to be applied, it has to be manually added to commercially plastic bags attached to each tree. A small engine mounted on the platform of the 650-gallon tank supplies the force to generate the water pressure and a garden hose serves as a conduit for the water. The bags receiving the irrigation allow the water to permeate into the soil from holes in the bottom of the container. Another method of delivery to plants without a plastic bag is to apply the water manually with the garden hose to the root zone of the plant.

Justification for Water, Sewer, and Irrigation Upgrades:

Based on a Facility Utility Study completed in 1998, the water, sewer, and irrigation systems should be upgraded for the following reasons:

Water – adequate, reliable supply for irrigation, allows expansion of production, compliance with fire codes for safety and fire suppression

Sewer – replaces non-expandable septic system due to proximity to stream and wetlands with WSSC sewer line

Irrigation – allows expansion of production, minimizes water usage, prevents loss of plants, compliance with Stormwater Pollution Prevention for facility and operational efficiency

Irrigation Requirements in Fields at the Pope Farm:

Pope Farm has over 8,000 established trees in the nursery that need water on a regular basis to survive and grow. Historically, water has been trucked to the trees in a 750-gallon tank that is pulled behind a tractor. Water from this large tank has to be manually added to commercially purchased plastic bags that allow the water to permeate into the soil from holes in the bottom of the container. Water runs out of these containers the same day and they have to be refilled frequently. Trees irrigated in this manner have died or suffered because of the lack of water, or other trees have died because they could not be supplied with water in this antiquated system. The current needs of the 8,000 tree inventory cannot be satisfied from the inefficient use of man power and out-dated machinery currently available to bring water to these plants. It is inefficient, costly and totally inadequate to supply trees with water in this manner.

Plants growing in the field in most nurseries receive irrigation water in a number of ways. One way is from deeply drilled wells that supply water using a large diesel pump to a traveling large irrigation gun or portable irrigation lines. Large irrigation guns require in excess of 1,000 gallons per minute of water and are inefficient in their delivery. Portable irrigation systems need to be relocated to areas that need water and also require large amounts of water to charge the line and maintain enough pressure to run the irrigation heads.

Drip irrigation offers a method to deliver water in small quantities to areas where it can best be utilized by the plant. Water oozes slowly, above ground, out of a small hose to where the tree roots are located. This method of irrigation conserves water because it delivers water to where it is needed. Water is not wasted like it would be in a sprinkler or large water gun system. Water usage is 30-50 percent more efficient and not subject to evaporation or run off because it is completely absorbed by the soil. A drip irrigation system servicing the fields would allow adequate moisture for new and established trees and eliminate the death and other symptoms associated with drought in the past. It would alleviate the need for manpower, be efficient and cost effective while conserving water and runoff.

A drip irrigation system would increase productivity. Plants have been shown to grow faster, are healthier, produce more flowers and are more adaptable in the landscape with drip irrigation. Root systems are more vigorous because drip systems have a cooling effect on the soil and will reduce soil temperature during the hot summer months. Drip irrigation reduces soil compaction and the soil maintains its integrity. Drip irrigation systems are long-lived in the field, and they will last for decades with little maintenance.

PRELIMINARY DESIGN

Preliminary Plans have been prepared for the proposed Waterline, Sewer Line and Irrigation System. See the attached Facility Plan Technical Report for details.

Environmental Impact

As part of the facility planning process, impacts to wetlands, floodplains, forest, historical and cultural features, and flora and fauna, were assessed. See the attached facility plan technical report for summary of environmental impacts.

PROJECT COST

The total project cost is estimated at \$1,441,000, as follows:

Hard Costs		
• Construction Estimate	\$887,000	
• Construction Contingency (30%)	\$266,000	
<i>Subtotal – Hard Costs</i>		\$1,153,000
Soft Costs		
• Design Fee (10%)	\$115,000	
• Staff Charges (5%)	\$58,000	
• Construction Management & Inspection (10%)	\$115,000	
<i>Subtotal – Soft Costs</i>		\$288,000
Total Project Costs		\$1,441,000

PROJECT SCHEDULE

Staff will recommend the project schedule during the Planning Board's review of the FY 05-10 CIP.

CONCLUSION

Staff recommends approval of the facility plan.

ATTACHMENTS

1. Facility Plan Technical Report