



3500 Parkway Lane, Suite 500
Peachtree Corners, Georgia 30092

T: 678.336.7740 | F: 678.336.7744
www.pondco.com

To:

From: Arwin Lopez, PE, Pond & Company

Date: April 14, 2022

Subject: Effingham Parkway and Forest Haven Drive/Squirrel Run a

Pond Proj. # 1220123

CC:

INTRODUCTION AND PURPOSE

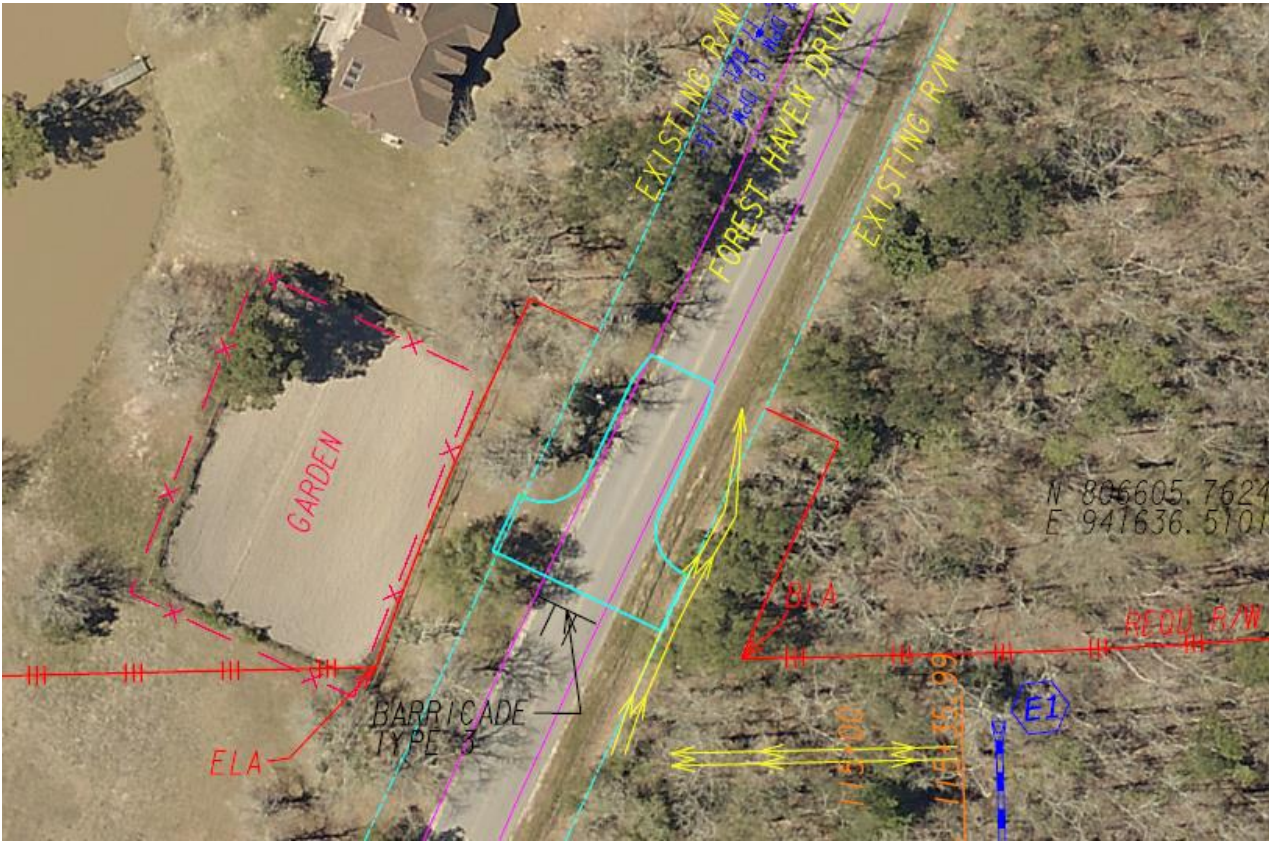
This memorandum is to provide observations to the implementation of either one of two alternatives as related to the construction of Effingham Parkway Extension. The Effingham Parkway Extension project goes through the existing intersection of Forest Haven Drive and Squirrel Run. One of the alternatives evaluated include construction of a Cul-de-sac on Forest Haven Drive west of the Effingham Parkway Extension. The second alternative would keep the connection between Forest Haven Drive and Squirrel Run.

EXISTING CONDITIONS FOREST HAVEN DRIVE

Forest Haven Drive is a two-lane local road with a 25-mph speed limit. The road has various curves, some back-to-back and other reverse curves. The road cross section of the road is normal crown and has no superelevation. The county estimates the existing pavement section consist of 2 inches of asphalt and 6 inches of gravel base. Forest Haven drive is approximately 4,800 feet, or 0.9 miles, in length.

CLOSING FOREST HAVEN DRIVE

A planning level cost estimate was prepared for two options to close Forest Haven Drive west of Effingham Parkway. The images below show the planning-level layouts of a cul-de-sac and a hammerhead cap. Corresponding cost estimates of each are attached. These designs assume Squirrel Run would be connected to the Effingham Parkway Extension and that intersection would be part of the Effingham Parkway extension project.



FOREST HAVEN DRIVE CONNECTION TO EFFINGHAM PKWY EXTENSION

The alternative of connecting Forest Haven Drive into Effingham Parkway would require various upgrades to Forest Haven Drive to accommodate the added traffic anticipated through this road.

The existing pavement section would be inadequate considering the anticipated traffic volume and vehicle loads; therefore, it is anticipated the pavement should be upgraded. There are two possible alternatives to this upgrade. Either removing the existing pavement and constructing a new pavement section consisting of 6 ¼ inches of asphalt and 8 inches of a compacted gravel base. The estimated cost of full depth reconstruction for the 0.9 miles is \$700,000. The second, and possibly more cost effective, option is to perform a Full-Depth Reclamation (FDR) of the existing pavement. FDR requires pulverization of the existing asphalt and subbase; this pulverized material is then blended with a stabilizing material such as portland cement. This mix of existing pulverized and stabilizing material is compacted and finally topped with a new asphalt. FDR enhances the existing pavement section and provides the structural capacity for the needs. The estimated cost of FDR for the 0.9 miles is \$400,000. It is recommended that a geotechnical engineer provide an evaluation of existing pavement and final recommendations for the upgrades to the pavement section.

Since Forest Haven Drive would provide a direction connection to Effingham Parkway, it is anticipated that the road's classification should be upgraded to a collector road. Collector roads have a higher design speed in relation to a local road. The collector road classification would ideally bring the road's speed limit to 35 mph. The higher speed limit would warrant the need to upgrade certain curves along Forest Haven Drive. The curves would require to be increased in radius to safely accommodate the higher operating speeds. The increased radius would provide adequate sight distance and stopping sight distances – key elements to a safer roadway. It is estimated that seven (7) sections/curves of the existing road would require upgrades see attached exhibit. Upgrading these curves would likely require additional right-of-way and reconstruction of the road sections leading up to the curves.

In addition to the horizontal upgrades to the curves the cross slope of all the curves should also be considered for upgrades. Adding superelevation to the existing curves would further accommodate the higher operating speeds.