

Financial Evaluation of Independent Water Systems

Summary

This report is being provided in response to Mr. Goodson's request.

The average residential lot served by an independent water system annually requires \$526.29 in expenses while generating \$391.61 in revenues for an annual \$134.67 deficit in expenses over revenues.

Background

The County's Subdivision Ordinance requires the installation of a Central Water System for any parcel that is subdivided to create six or more residential lots or requires the installation of a new access street/road. The JCSA currently operates six water systems ranging in size from 33 to 133 customers that have been installed as a result this requirement. Three new water systems to meet this requirement are in progress, with three others at some stage of planning. A map locating the existing, in progress, and planned water system is attached.

It is reasonable to assume that the cost of service to a JCSA - Central Water System customer is less than that to an Independent Water System customer because of economies of scale.

In 2004, recognizing that independent water systems do not generate adequate revenues to cover operating costs; the Board approved a \$4,000 per lot fee to a developer building an independent water system. The proceeds of which were to create an income generating fund to offset the costs of operating the requisite water system. Assuming a 3.5 percent return on the fund, each lot would produce approximately \$140 per year that can be applied to the cost of operating the water system.

The Board, in 2004, also reaffirmed its intent to charge independent water system customers the same fees as customers served by the Central Water system.

Independent water systems are installed by the developer and dedicated to the JCSA upon completion. Recent reports indicate that a well facility serving approximately 100 lots costs in the \$2.0 million range to construct. Ultimately, the cost of the well facility depends on the number of lots served. Fewer lots equate to lower facility costs. Fewer lots do not mean an incremental reduction in cost. The costs of the distribution system varies based on the street layout and lot separation/size, and can easily cost an additional \$1.0 million. Because most independent water systems serve developments that require a three acre minimum lot, more water line is necessary than what is needed for a more dense development.

Department of Environmental Quality

The Virginia Department of Environmental Quality (DEQ) requires a Groundwater Withdrawal Permit for any water withdrawal that exceeds 300,000 gallons per month. A residential subdivision of approximately 33 lots/homes or more generates adequate water demand to warrant a groundwater withdrawal permit. Because of continued stress on the aquifer any development that requires a groundwater withdrawal permit will not be issued a land disturbing permit until DEQ declares its intention to issue a groundwater withdrawal permit. Westport, Liberty Ridge, and Deer Lake are recent developments that have been affected by this procedure. Obtaining a groundwater withdrawal permit from DEQ can easily take 24 months. The groundwater impact area for this type of application because of the overall size of the development and relatively small withdrawal does not usually extend the boundaries of the development. Thus, in most cases DEQ will issue a permit for the withdrawal.

Board Action

In 2004, recognizing that independent water systems do not generate adequate revenues to cover operating costs the Board approved a \$4,000 per lot fee to a developer building an independent water system. The proceeds of which were to build an income generating fund to offset the costs of operating the system. Assuming a 3.5 percent return on the fund, each lot would produce approximately \$140 per year that can be applied to the cost of operating the water system.

The Board, in 2004, also resolved to charge independent water system customers the same fees as customers served by the Central Water system.

Revenue versus Costs for Independent Water Systems

The number of customers, annual revenues, and expenses for the most recent year for each of the independent water systems are as follows:

Water System	Customers	Revenues	Expenses
Wexford (Riverview)	133	\$30,141.78	\$29,776.56
Racefield	33	13,166.78	31,483.54
Glenwood	33	6,462.43	35,328.23
Kings Village	48	11,238.68	35,232.06
Ware Creek Manor	67	11,504.31	27,944.78
The Retreat	50	<u>19,072.96</u>	<u>31,817.53</u>
Total	364	<u>\$91,586.94</u>	<u>\$191,572.70</u>

Average Revenue per Customer	\$251.61
Average Costs per Customer	\$526.29
Lot Fee Return	\$140.00
Surplus/ (Deficit) per Customer	(\$134.67)

*((\$10,000 is added to each facility to cover the costs of painting, permitting and pump replacement)

Economic Impact

Based on projected revenues (including \$140 per year return for lot fees) and expenses, each lot served by an independent water system has an annual operating loss of \$134.67. To generate adequate funds to have a “break-even” situation the lot fee would need to be increased to approximately \$8,000.

Please note that the only water system that is in a “break even” revenues versus expenses position is the Wexford Hills System. This is the result of the system having adequate customers (133) to create an economy of scale synergy brought about by the number of customers. This reaffirms revenues versus expenses evaluation performed a few years back that indicated that it takes approximately 100 customers before an independent water system can be in a “break even” position.

No consideration has been incorporated into this revenues/costs analysis of an independent water system during build-out. As an example, assume that a development has an independent water system to serve 50 lots. The costs of operating the well facility is approximately the same, less some electricity costs from the first day the system is placed into operations as it is at built-out. In many cases it takes years for an independent water system to “build-out”. The developments full revenue potential is not realized until build-out, while for the most part expenses are maximized as soon as the facility is placed into operation.