PLEASANTS COUNTY

MASTER PLAN

WATER STUDY REPORT

- EXPANSION FEASIBILITY -

FOR THE

PLEASANTS COUNTY COMMISSION

JULY 2001

PLEASANTS COUNTY MASTER PLAN
WATER STUDY REPORT
- EXPANSION FEASIBILITY -
FOR THE
PLEASANTS COUNTY COMMISSION
JUNE 2001
TABLE OF CONTENTS

PLEASANTS COUNTY MASTER PLAN
WATER STUDY REPORT
- EXPANSION FEASIBILITY -

INTRODUCTION:

Water is considered to be a staple of life. Having a safe and reliable source of potable water is often a luxury overlooked. However, this luxury is one that is highly valued in the State of West Virginia. With the abundance of coalmines throughout the state, it is often the case that well water is of an inferior quality and quantity to that of a public water system. Also, due to the geographical nature of the state, providing infrastructure to all residents is very costly. Customers tend to live rural in areas that are sparsely populated. The low population density induces a high construction cost per customer, which makes it harder for the provider to recover the initial cost of installation. Therefore, in order to provide water service to customers around the state, county commissioners, city councils, public service district boards, and others are creating a plan of action for their service area that outlines the best means, methods, and cost effectiveness of providing residents this valuable commodity.

One county undertaking this initiative is Pleasants. Pleasants County, West Virginia is located in the western portion of the state. It has approximately 7,500 residents covering an area of 131 square miles. The county is bordered by the Ohio River, which provides plentiful opportunity for economic development. Neighboring land areas include Tyler County, WV to the Northeast, Ritchie County, WV to the Southeast, Wood County, WV to the Southwest, and Washington County, Ohio to the Northwest. As previously mentioned, a deficiency in Pleasants County, as with the majority of West Virginia, is adequate infrastructure.

Currently, Pleasants County has four operational public water providers. These four are City of St. Marys, City of Belmont, Route 16 Water Corporation, and Union Williams Public Service District. These systems provide water to approximately three-fourths of the county's residents. In this respect, the county tends to be ahead of the curve in providing water service to its inhabitants. Although this is true there are still approximately 2,000 residents without public water. To improve the Pleasants County potable water infrastructure system, this study evaluates providing water service throughout the entire county.

In this study, each potential water provider will be considered. All existing system components, geographic location, and hydraulic advantages will be assessed on how beneficial they may be to the county. We will begin by studying current potable water providers based within the county: St. Marys, Belmont, and Rt. 16. Next, Union Williams' potential for extensions will be considered. Although they currently provide water service within Pleasants County, they are headquartered in Wood County. Then, we will account for other surrounding systems and whether it is feasible to utilize their systems. Two other systems, outside of the county, which are in relatively close proximity to the county line, will be examined for potential use. These systems are the City of Pennsboro Water Works (Ritchie County) and the Friendly Public Service District (Tyler County). Lastly, we will consider the need for an additional Public Service District in Pleasants County. This evaluation considers whether an existing public

service district's boundary should be extended or whether the creation of a new public service district would serve the residents better.

Through the complete evaluation of the aforementioned tasks, a defined plan to provide the citizens of Pleasants County water is presented.

EXISTING SYSTEMS:

Serving customers with water first requires one to identify the source that will be used. The low population density and the large service area define that a new water treatment plant would not be applicable. Therefore when recommending feasible extensions to unserved areas, a considerable dependence on an existing system will be required. A complete system evaluation, of possible providers, was necessary to adequately define practical expansions. These evaluations considered the type of system, its status with the West Virginia Bureau of Public Health (WVBPH), the treatment plant's operating and design capacities along with other pertinent information.

City of St. Marys:

The St. Marys water system is a Class I community distribution system. This system has approximately 1,104 meters and serves roughly 2,500 residents. Of the system's customers, 973 are residential, 128 are commercial, and 3 are industrial. The City of St. Marys also supplies water to the Route 16 Water Corporation. This is a commendable system, as it was reported in the WVBPH 2000 sanitary survey, which is complying with all the requirements of the West Virginia Public Water Supply Regulations.

St. Marys utilizes ground water via wells as their raw water source. The raw water is then treated with Chlorine, Caustic Soda, Phosphate, and Fluoride. The water treatment plant currently operates at an average daily production of 342,240 gallons per day (GPD) of potable water covering 9.5 hours of operation per day (hrs/d). It has a maximum daily production capability of 1,440,000 GPD utilizing a production period of 24 hrs/d. St. Marys' wells, commonly referred to as #5 & #6, were constructed in 1979 & 1990 respectively. Well #5 is a 12"diameter and 78' deep well capable of producing 600 gallons per minute (GPM). Well #6 is a 12"diameter and 80' deep well capable of producing 625 GPM. In short, the St. Marys water system's production is operating at 60% of its capacity.

The distribution system consists of four (4) ground storage tanks. The capacity of each tank is as follows: Shadow Hill – 396,000 gal; Harmony Heights – 263,000 gal; Mt. Carmel – 40,000 gal; Oakwood Terrace – 4,500 gal. Each tank has an acceptable corrosion control, exterior coating, and interior coating except for Oakwood Terrace. The exterior coating on the Oakwood Terrace tank is in need of repainting. These tanks are an adequate supply of storage for St. Marys. The distribution system's pipe material consists of ductile iron, PVC, transite, and some 2" galvanized. The system maintains a minimum pressure of 80 PSI, which is above and beyond the Health Department requirement of 30 PSI. This system also maintains low water unaccountability with their loss at 5.4% in 1999.

City of Belmont:

The City of Belmont's water system is a Class II community distribution system. This system has approximately 463 meters and serves roughly 1,160 residents. Of the system's customers, 424 are residential, 34 are commercial, and 5 are industrial. As reported in the WVBPH 2000

sanitary survey Belmont is complying with all the requirements of the West Virginia Public Water Supply Regulations.

Belmont's distribution system utilizes two (2) high service pumps to distribute the water from the plant to the customers. Belmont has two (2) 220,000-gallon storage tanks. Both tanks are in good condition. This system maintains a minimum pressure of 45 PSI. Their current water loss is approximately 11.6%, down from 17.9% in 1999.

Belmont makes use of a ground water well supply as their raw water source. The raw water is then treated with Potassium Permanganate, Fluoride, Acid, Soda Ash, and Chlorine. The water is filtered and softened, through reverse osmosis (RO). The water treatment plant currently operates 10 hrs/day producing approximately 215,000 GPD. This plant was designed for an operating capacity of 432,000 GPD, but due to budget constraints during construction the plant capacity was reduced. Belmont has two source wells labeled as #1 & #2. These wells were constructed in 1998. Well #1 is a 12" diameter 65' deep well capable of producing 288 GPM. Well #2 is an 8" diameter 75' deep well capable of producing 159 GPM.

Belmont's water plant produces high quality water. Although this is true, there are some deficiencies that need to be noted. A primary deficiency is the plant's operating budget. Belmont's current water rates are not adequate enough to facilitate the appropriate maintenance of the plant. Their rate for 4,500 gallons per month is $19.49 and ranks 184 of 422 (lowest to highest) within the state. The budgetary constraints are obvious when investigating the short history of the RO plant. As a common occurrence, RO plant filters must be cleaned. It is believed that a previous failure of the system was due to the RO membranes not being cleaned. The cleaning of these filter membranes can occur in numerous manners and time periods. One method of cleaning is to have them factory cleaned. This cost is estimated at $4,000 dollars. Another method is to clean the membranes in place through injection of chemicals. This cost is estimated at $1,500 - $1,800 and takes two days. With this costly occurrence, the frequency of cleaning becomes vital to the sustainable operation of the system. Cleaning of the membranes was planned to occur once every 3 months, but due to the quality of source water they have to be cleaned every 2 months. The unexpected increase in cleaning and the high cost impose a financial hardship on the system under the current operating budget. This hardship, for now, is one that must be endured. These membranes are expensive, costing about $770 each. There are 54 membranes within the system. Therefore, a new set of membranes would cost about $41,580. The life expectancy of the membranes is three years. If through inadequate maintenance the membranes' useable life were reduced, a more severe cost impact would be incurred sooner than expected. Although cleaning and maintenance is costly, it is imperative that it be properly performed as it may possibly extend their useful life. Belmont should be reserving money to purchase the replacement membranes on a triennial basis. It is unknown if this is being done. One other problem to be noted is that the plant is short on clearwell capacity. The plant's mechanical greensand filters cannot be sequentially backwashed and still provide fire flows. Additional clearwell and/or backwash tank would be beneficial.

Route 16 Water Corporation:

The Route 16 Water Corporation is a privately owned Class ID community public water system and purchaser system/groundwater source. This system has 411 meters and serves a population of 1,027. According to the 1998 sanitary survey, this system is capable of meeting the requirements of the Safe Drinking Water Act with specific modifications, effective operation, and proper maintenance.

Route 16 utilizes purchased groundwater from the St. Marys public water system. Chemicals are not added to the purchased water since St. Marys has previously treated the water. The system is operated twenty-four hours a day providing 2,500,000 gallons per month or 82,000 gallons per day. St. Marys serves as the sole provider of potable water to Rt. 16.

The water distribution system consists of two (2) water storage tanks. Both tanks are located on Kings Ridge. They provide 195,000 gallons or 2.34 days of storage through the 120,000 gallon glass lined tank and the 75,000 gallon steel tank. The 120,000 gallon tank was installed in 1988 and the 75,000 gallon tank was repaired in 1983 via a cleaning and painting. Water is provided to the tanks using two (2) twenty-five (25) horsepower high lift pumps. The pumps are rated for 60 GPM and are controlled with telemetry from the tanks. The distribution system has 89,700 feet of PVC water pipe. The minimum pressure in the system is 30 PSI while the maximum pressure is 120 PSI. Customers are responsible for installing their own pressure reducers, as necessary, to control service pressure. Route 16 operates at a water accountability rate of 75.57%, which translates into a loss of 24.43%. The West Virginia Public Service Commission (WVPSC) considers this percentage of water unaccountability to be unacceptable.

Route 16 is currently in the process of extending water service into Ritchie County. This project will add 72 customers along 7.5 miles of waterline serving the communities of Pike, Finch, and Bonds Creek Run in Ritchie County. It will also increase the system storage through the addition of a 63,000 gallon tank, however the tank will only benefit the Ritchie County extension.

Union Williams Public Service District:

The Union Williams Public Service District (UWPSD) is located in Wood County, WV. It is a Class II community water distribution system. This system serves 7,250 residents of Wood and Pleasants counties through 2,493 residential and 82 commercial meters. It also serves as a standby system for the City of Williamstown and the City of Belmont. The original water system was constructed in 1967. UWPSD did not expand into Pleasants County until the early 1990's. UWPSD is continuing to provide potable water service to the residents and businesses of Pleasants County. UWPSD serves approximately 350 customers in Pleasants County. In 2000, a water storage tank was built for the Pleasants County Development Authority (PCDA) at the Pleasants County Industrial Park (PCIP), west of Belmont. UWPSD is currently working on upgrading their high service source pump station and constructing an additional 10" water line to the Pleasants County Industrial Park to improve the hydraulic condition of the park's water system.

UWPSD utilizes wells to supply their raw water. The water is treated with Fluoride, Chlorine, and Phosphate. The existing maximum daily production is 800,000 GPD with the average daily production hovering around 600,000 GPD. The maximum design capacity is 1,300,000 GPD with the average design capacity at 1,000,000 GPD. UWPSD has four (4) source wells. Wells #1, #2, & #3 were built in 1979. An additional well, #4 was built in 1996 in order to meet the ever-increasing demand. In addition to the improvement to increase water service to the PCIP, UWPSD is adding another raw water supply well. It is anticipated the well will produce 300 GPM, which is equivalent to an additional 288,000 GPD of capacity.

The Union Williams system consists of eleven (11) tanks totaling 1,800,000 gallons of storage. Although this storage is available throughout the system, we will only discuss the system components directly correlated to Pleasants County. In the Pleasants County area, UWPSD has four (4) tanks that supply stored water to Pleasants County. They are the Waverly, PCDA, Ault, and Schultz tanks. These tanks are in good condition. The Schultz tank is supplied by a booster pump station, referred to as Polecat, which operates at 40 GPM. The pipe distribution system consists of asphalt cement pipe (ACP), polyvinyl chloride pipe (PVC), and ductile iron pipe (DIP). This system maintains a minimum pressure of 30 PSI and in Pleasants County a maximum pressure of 175 PSI. The overall condition of the UWPSD system is excellent. They maintain a very low water unaccountability rate of 5.1%. The UWPSD currently operates, on the average, at 46% of capacity. With the addition of well #5, they will operate at approximately 38% of capacity

Friendly Public Service District:

The Friendly Public Service District (Friendly PSD) water distribution system is a Class I community water provider. Friendly PSD has 214 residential and 9 commercial customers totaling 223 customers with a service area population of 560 residents. This system is in compliance with the West Virginia Public Water Supply Regulations.

Friendly PSD has an average daily production of 53,704 gallons of potable water. This average production is accomplished over an 11.81 hr average time period. A maximum operational period for Friendly is 24 hrs yielding a maximum daily production of 216,000 gallons. In treatment of water, Friendly relies upon two (2) wells as a source of raw water. These wells, referred to as North and South, were constructed in 1972. Each well has an operational capacity of 75 GPM. They are each 12" in diameter and 80' in depth. Friendly only has to treat the well water with chlorine to achieve quality water.

Friendly's distribution system has two (2) ground storage tanks that are referred to as the Cemetery tanks. These tanks combine for 100,000 gallons of storage. The tanks are in adequate condition, but could use repainting. These tanks provide a marginal water reserve for the systems customers. The system has two (2) booster stations with vertical turbine pumps. The Friendly station operates at 50 GPM while the Hill station operates at 75 GPM. Piping material consists of Ductile Iron and PVC in various sizes. The minimum system pressure is 90 PSI. The Friendly system's unaccounted for water is approximately 11% of its finished water, which is within the acceptable limits of the WVPSC.

The Friendly PSD currently has plans to extend its water system south to the Ben's Run area, which is near the Pleasants County border.

Pennsboro Water Works:

The Pennsboro water system is a Class II community distribution system. This system has approximately 645 meters and serves roughly 1,390 residents. Of the system's customers, 555 are residential, 80 are commercial, and 10 are industrial. Also, Pennsboro sells potable water to the Ellenboro-Lamberton Public Service District to use as their source of supply. The Pennsboro system is complying with most of the West Virginia Public Water Supply Regulations.

Pennsboro uses a surface source of raw water to treat and supply their customers. The raw water is withdrawn from the Hughes River, located adjacent to the plant, through a fine screen intake. The raw water intake has two (2) 300 GPM pumps. In the event of a low flow period of the river, a raw water reservoir with an eleven (11) acre capacity would be used as their secondary source. The raw water is treated with Potassium Permanganate, Alum, Fluoride, Phosphate, Chlorine, and Soda Ash. In the process of treating the water, flocculation, sedimentation and filtration are used to enhance the quality. Average plant operation produces 708,480 GPD, while the maximum design capacity of the plant is 720,000 GPD. This plant will be eliminated within the next few years. A new plant is being built in Harrisville that will utilize the body of water, being created by a dam for flood control purposes, as a raw water source. This body of water will provide a seemingly endless supply of raw water for the communities of Pennsboro, Harrisville, Cairo and the Ellenboro-Lamberton PSD. The new plant will supply this system with potable water and the Pennsboro water plant will become inoperative.

Pennsboro's distribution system has three (3) ground storage tanks: Broadwater Circle, Industrial Park, and Rose Hill. These three tanks combine for 1,013,000 gallons of storage. The tanks are in satisfactory condition and provide more than enough reserve. The system has two (2) booster stations, 100 GPM and 22 GPM, which supply the Industrial Park and Rose Hill tanks respectively. Piping material consists of Ductile Iron and PVC in various sizes. The minimum system pressure is 60 PSI. The Pennsboro system supplies adequate water to its customers, although it could benefit from a reduction in unaccounted for water. It is losing approximately 38% of its finished water. Some of the unaccounted water is supplied to several customers (i.e. Fire Dept, City Garage, Sewer Plant, etc…) whose usage is metered, but not billed.

It is possible that the Pennsboro water system could supply the Eastern most sections of Pleasants County with potable water via the flood control dam project. However, it is unlikely a rate of purchase for water from Pennsboro would be competitive with the St. Marys system due to the fact that Pennsboro would be purchasing from a supplier and reselling to another supplier.

WATER SERVICE MASTER PLAN:

The Pleasants County master plan for water line extension projects will provide potable water service to 698 new customers and involve approximately 110 miles of water line. To make the project more reasonable, it has been divided into five project areas. These areas have been divided based on numerous things such as location, elevation, and customer dispersion.

Providing water to every potential customer is ideal and serves as the goal of the County. Although this is true, it would be extremely costly. With respect to customers and monetary expenditures, prospective extensions were evaluated for their cost effectiveness. A simple comparison, which is often used throughout the nation, is each extension's respective cost per customer. This allows for a straight-line comparison between extensions. A baseline dollar value of $25,000 was used a delineation point of reasonableness.

Northern Pleasants County Public Service District:

In evaluating service extension areas, the possibility of creating a new public service district was evaluated. Proposed extension areas were considered as to who would best serve and represent the customers of these extensions. It was evident, that there were areas, in which no existing entity could properly serve the proposed customers. These areas were in Northern Pleasants County. An area best described as North of County Route 16, West of the Ritchie County border, South of the Tyler County border, and East of St. Marys and the Ohio River. It was recognized that this area was too widespread for St. Marys or Pennsboro to cover and was too far away from Friendly PSD's boundary. Therefore, creating a new public service district seems logical. The PSD, referred to in this report as Northern Pleasants County PSD, would encompass this entire area and all customers not within any other provider's boundary. Northern Pleasants County PSD would cover all or portions of Pleasants Ridge / Arvilla, Adlai / Hebron, and Big Run / Sugar Creek. It is anticipated that the Northern Pleasants County PSD would buy water from the City of St. Marys. Additional treatment of the supplied water would not be required.

Pleasants Ridge / Arvilla:

The Pleasants Ridge / Arvilla area is located in Northern Pleasants county. It covers an area of approximately 18.5 square miles primarily between Middle Island Creek and the Ohio River. It will provide service to communities such as Arvilla, Raven Rock, & Pleasants Ridge.

A complete survey of Pleasants Ridge / Arvilla provided 17 possible extensions. These extensions provided service to 235 potential customers. A total distance of 26.5 miles of waterline would need to be installed in order to provide all the residents of this area with service. Of the 17 possible extensions, 1 extension had a cost per customer above the $25,000 limit, which was in turn eliminated resulting in a project reduction to 16 extensions and 234 customers. Cost for servicing the reduced project area is $.3,391,000. An elevated tank, a booster pump station, and a pressure reducing station would be required. The tank's location would be along Pleasants Ridge. In order to supply this tank with water, the booster station will be installed along Java Run near the project's connection point to the City of St. Marys. A pressure reducing

station is required because of the severe drop in elevation from Pleasants Ridge to Arvilla. Cost estimates and a project summary are included in this report.

Adlai / Hebron:

Adlai / Hebron covers most of the eastern part of Pleasants County. This project area would be covered under Northern Pleasants County PSD. As with the Pleasants Ridge / Arvilla extension, water would be purchased from the City of St. Marys and resold under the PSD.

The Adlai / Hebron project area proposes 33.5 miles of water line extensions which will serve 221 customers. This area is provided coverage through 17 extensions. Evaluating the cost effectiveness of each extension revealed that four (4) were of an inappropriate cost. These sections were identified as high cost. The reduction in this areas project scope resulted in a decrease in customers served to 187 customers. The area's project cost is $2,950,700. This extension is not as feasible as the Pleasants Ridge / Arvilla extension because it covers a larger and less densely populated tract of land, but is very viable.

The Adlai / Hebron extension has water lines with diameters ranging from 2 to 6 inches. A 100,000-gallon water tank will be constructed at an elevated point along Co. Rt. 28 near Federal Ridge to increase storage capacity. Also, a 100 GPM Booster Station will be installed along Co. Rt. 28 to pump water to the new water tank.

Calcutta / Wiley:

The Calcutta / Wiley water line extension project will provide potable water service to the customers located in the center of the county. This project is in close proximity to Rt. 16 Water Corporation, Union Williams PSD, and on the western end Northern Pleasants County PSD. This project area covers 23.3 miles and has 146 potential customers. Calcutta Wiley was evaluated via 15 serviceable areas. Of these 15, four (4) were above the cutoff limit, but one had to remain in order to serve other areas. Exclusion of the three (3) high cost removed extension areas left the project to serve 140 customers over 20 miles. The total cost of this project area is $2,577,100. This extension is not as practical as Pleasants Ridge / Arvilla or Adlai / Hebron, but it is attractable due to its number of customers.

The Calcutta / Wiley area does not fall under a defined serviceable area boundary. Water could be provided from many sources such as Northern Pleasants County PSD, Belmont, Rt. 16, or Union Williams. This area would probably be best served if it were under the direction of Union Williams as it is adjacent to their existing service area. A 75,000-gallon water tank will be constructed along Co. Rt. 30 to provide capacity, which will be supplied by a 100 GPM Booster Station.

Big Run / Sugar Creek:

Big Run / Sugar Creek covers a small area of the county in the northeast. The water line extensions in this phase will connect to the Pleasants Ridge / Arvilla water lines and will be included in the newly proposed Northern Pleasants County Service District.

Big Run / Sugar Creek was considered separate from Pleasants Ridge / Arvilla due to feasibility. While Pleasants Ridge / Arvilla involved primarily short extensions with high customer density, Big Run / Sugar Creek customers are sparsely located over a fairly long distance. This area will cover about 10 miles while providing potable water service to 38 new customers. One extension was deemed as high cost in this project area. Therefore, the feasible project would serve 35 customers over approximately 7 miles. The total project cost for Big Run / Sugar Creek comes to $686,500.

The Big Run / Sugar Creek project area falls under the direction of Northern Pleasants County. There are not any tanks or booster stations that are needed in this project. Water will be supplied from the previously installed water tank on the Pleasants Ridge / Arvilla project.

Horseneck / Bull Creek:

The Horseneck / Bull Creek project area covers the southwestern portion of the county. This phase will utilize the Union Williams Public Service District Water Distribution System as a water source. The new water lines will tie-in to the existing Union Williams Water Distribution System at Parrish and feed out of the existing 200,000-gallon water tank. It is our recommendation that Union Williams, as with Calcutta / Wiley, serve this area.

The studied serviceable area covered 18.2 miles and had 58 potential customers over six extensions. Half of these extensions were found to be too costly and are not included. The project cost for the viable area is $472,000. This area does not require a tank, booster station, or any other hydraulic control device. It simply involves this installation of 3.5 miles of water line serving 20 customers.

High Cost Extensions:

As previously mentioned, “high cost” areas were defined by each extension’s cost per customer. Any extension, which the cost per customer was above $25,000, was place into this category. This list was then evaluated as to whether or not the extension was needed hydraulically. If this was the case, as with section “Co. Rt. 31 along Southern Co. Line (BN)”, it was place back into the initial project area. The high cost extensions were then reviewed under the standard of supply line or branch line. If the high cost extension was a branch line, then it could easily be removed from the project. If the high cost extension were a supply line, then its removal would affect other extension areas. The extension “Co. Rt. 28 along Federal Ridge (AC)” was a high cost supply line that when deleted, sections “Delta Rt. 3 off of Co. Rt. 28 (AD)” and “Co. Rt. 28/2 off of Co. Rt. 28 (AE)” also had to be removed.

Generally, high cost extensions within the county were extensions where a small number of customers were served. Of the twelve removed sections, only two had more than four customers. The two extensions with more than four customers traverse numerous miles to include these customers. A construction cost summary and individual cost estimates were included for review. A project summary was not defined because construction of these extensions would be best accomplished through their inclusion with other project areas, if funds were available.

SUMMARY:

The Pleasants County Master Plan evaluated providing potable water to every potential customer in the county. During this evaluation, it was surmised that there were 60 potential extensions, of which, 48 extensions cost under $25,000 per customer. Construction of all 48 feasible extensions would provide service to 616 customers of the county's possible 698 customers. Of the 616 customers, 463 would be represented by Northern Pleasants County PSD and 153 by Union Williams PSD.

Construction of the Pleasants County Master Plan would be a massive undertaking with many hurdles. One major hurdle in providing these citizens water is funding. This project can be funded in a variety of manners. The type of funding will have to be a loan and grant mix for a project of this magnitude. Funding could come from the County Commission, West Virginia Infrastructure and Jobs Development Council, Water Development Authority, West Virginia Drinking Water State Revolving Fund, or many other sources. We are working in conjunction with the Mid-Ohio Valley Regional Council to determine the most appropriate funding scenario. The funding package is very important, but deciding on the amount of funding to seek is more prevalent. Implementation of the Master Plan can proceed with an attempt to fund the entire project or a portion at a time. Funding the entire project at once may allow the county to leverage any money it has with other grant money to serve a majority of Pleasants County. Although, funding a portion of the project requires lower initial cost and may provide water to some residents faster. This is a decision that needs to be made. Upon this decision, revenue projections and a funding package can be presented.