

NewGen Strategies & Solutions

www.newgenstrategies.net

Docket No. W-354, Sub 398
Attachment MGL-2
Page 1 of 97

OFFICIAL COPY

Oct 14 2022



REPORT

FAIR VALUE APPRAISAL OF THE WATER SYSTEM IN CARTERET COUNTY

JULY 7, 2022



Prepared for:
Public Staff - North Carolina Utilities Commission
430 North Salisbury Street
Raleigh, NC 27603-5918

© 2022 NewGen Strategies and Solutions, LLC

EXECUTIVE SUMMARY

Presented herein is an appraisal report (Report) for the Fair Value estimate undertaken by NewGen Strategies and Solutions, LLC of the Carteret County Water System. This appraisal has been conducted for The Public Staff – N.C. Utilities Commission. This Report has been prepared in accordance with the Uniform Standards of Professional Appraisal Practice as promulgated by the Appraisal Standards Board of the Appraisal Foundation.

Summary of Value Indicators

	Value Indicators
Cost Approach	
OCLD	\$ 5,750,000
RCNLD *	\$ 13,032,000
Sales Comparison Approach	Not relied upon
Income Approach	
DCF	\$ 7,332,000
Fair Market Value	\$ 7,332,000

* Excludes adjustment for economic obsolescence

Note: Table values may not equal exhibit values due to rounding to the nearest \$1,000

Based on our analyses as discussed herein, NewGen Strategies and Solutions, LLC is of the opinion that the Fair Value estimate of the Carteret County Water system as of January 1, 2022 is approximately \$7,332,000.

We appreciate the opportunity to assist The Public Staff – N.C. Utilities Commission in this engagement. If you have any questions concerning this report, please contact me at mlane@newgenstrategies.net.

Table of Contents

Section 1 Premise of the Appraisal	1-1
Date of Valuation.....	1-1
Date of Appraisal Report	1-1
Purpose and Intended Use of Appraisal	1-1
Definition of Fair Value.....	1-1
Property Interests Appraised	1-1
Highest and Best Use.....	1-2
Scope of Services	1-2
Research Undertaken	1-2
NewGen Strategies and Solutions	1-2
Section 2 Assumptions, Considerations and Limiting Conditions	2-1
Section 3 Plant Description and Condition Assessment.....	3-1
Description of the Subject Properties	3-1
Condition of the System	3-2
Section 4 Fair Value Analyses	4-1
Introduction.....	4-1
Cost Approach	4-1
Sales Comparison Approach.....	4-3
Income Approach	4-4
Section 5 Conclusions.....	5-1
Discussion	5-1
Fair Value	5-2
Section 6 Appraisal Certification	6-1

Table of Contents

List of Exhibits

- 1 Appraisal Analyses
 - Table 1 OCLD Analysis
 - Table 2 RCNLD Analysis
 - Table 3 Sales Comparison Analysis
 - Table 4 Income Approach – General Assumptions
 - Table 5 Income Approach – Plant In Service
 - Table 6 Income Approach – Revenue Requirement
 - Table 7 Income Approach – Tax Depreciation
 - Table 8 Income Approach – Discounted Cash Flow Analysis
- 2 Cost of Capital (Discount Rate)
- 3 Draper Aden Associates Engineer Report

List of Figures and Tables

Figure 3-1 Carteret County Water System Infrastructure 3-2

Table 4-1 Cost Approach 4-3

Table 4-2 Sales Comparison Approach 4-4

Table 4-3 Income Approach 4-6

Table 5-1 Summary of Value Indicators 5-2

© 2022 NEWGEN STRATEGIES AND SOLUTIONS, LLC

OFFICIAL COPY
Oct 14 2022

Section 1

PREMISE OF THE APPRAISAL

The Public Staff – N.C. Utilities Commission (Public Staff or Client) retained NewGen Strategies and Solutions, LLC (NewGen) to perform an independent appraisal to determine the Fair Value (FV) of the Water System of Carteret County (the System or Subject Property).

In undertaking the study and analyses required to provide an opinion with respect to the FV of the System, NewGen relied on generally accepted valuation methods and procedures. This appraisal report was prepared in conformance with the 2020-2021 Edition of the Uniform Standards of Professional Appraisal Practice (USPAP) as promulgated by the Appraisal Standards Board of the Appraisal Foundation (extended through December 31, 2022).

Date of Valuation

The FV of the Subject Properties was estimated as of January 1, 2022.

Date of Appraisal Report

The date of this appraisal report is July 7, 2022.

Purpose and Intended Use of Appraisal

The purpose of the appraisal is to determine the FV of the System in accordance with the applicable laws, statutes and USPAP. The appraisal is intended to be used by the Public Staff in its decision-making processes related to the FV of the System in accordance with §62-133.1A of the North Carolina General Statutes and Rule R7-41 of the North Carolina Public Utilities Rules.

Definition of Fair Value

The definition of FV used in this appraisal report is as follows:

The price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.¹

Property Interests Appraised

This appraisal evaluates the properties with no restrictions, indebtedness, or other encumbrances. A description of the System can be found in Section 3 of this report.

¹ Fair Value as defined in Treasury Regulation §1.170A-1(c)(2)

Section 1**Highest and Best Use**

Highest and best use is defined as, "the most reasonably probable and legal use of a property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value."² In our opinion, the highest and best use of the System is its current use, to provide water service.

Scope of Services

At the request of the Client, NewGen performed an independent appraisal to determine the FV of the System as of January 1, 2022. In undertaking the studies and analyses required to provide an opinion with respect to the FV of the System, NewGen has relied on generally accepted valuation methods and procedures in accordance with USPAP. In performing the appraisal, NewGen considered all three generally accepted approaches to valuation (i.e., cost, income, and sales comparison) and their degree of applicability in estimating the value of the System in accordance with §62-133.1A of the North Carolina General Statutes. The results of NewGen's analyses and indicators of value developed are described in Section 4 of this appraisal report.

As part of the services provided, NewGen performed an on-site field review of the System in connection with the appraisal.

Research Undertaken

NewGen's opinions, set forth herein, are based on information provided by the Client, the engineering report for the System prepared by Draper Aden Associates (provided in Exhibit 3), other information generally available to NewGen, and studies and analyses undertaken by NewGen, all of which are basic to and in support of NewGen's opinion regarding the FV of the System. The studies and analyses undertaken in preparation of the opinions contained herein have been performed in accordance with USPAP as promulgated by the Appraisal Standards Board of the Appraisal Foundation. These studies and analyses included a site visit to the System and investigations and review of certain documents relating to the System.

NewGen Strategies and Solutions

NewGen Strategies and Solutions, LLC is a management and economic consulting firm specializing in serving the utility industry and market. We provide financial, valuation, strategy, expert witness, stakeholder and sustainability consulting services to water, wastewater, solid waste, and energy clients across the country. Our expertise includes litigation support in state and federal regulatory proceedings, valuation of utility property, business and financial planning, and strategic planning.

NewGen has provided appraisal reports for a wide range of sizes and types of utility property. Based on this experience, the NewGen team is well qualified to appraise utility property and prepare appraisal reports. Specifically, the appraisers and other personnel working on this assignment have the knowledge and experience to complete the assignment competently.

² American Society of Appraisers, *Valuing Machinery and Equipment*, page 570.

Section 2

ASSUMPTIONS, CONSIDERATIONS AND LIMITING CONDITIONS

In the preparation of this report, NewGen has made certain assumptions and used certain considerations with respect to conditions which may exist or events which may occur in the future. While we believe these considerations and assumptions to be reasonable based upon conditions known to us as of the date of this report, they are dependent upon future events and actual conditions may differ from those assumed.

While we believe the use of such information and assumptions to be reasonable for the purposes of this report, we offer no other assurances with respect thereto, and some assumptions may vary significantly due to unanticipated events and circumstances. To the extent actual future conditions differ from those assumed herein or from the assumptions provided by others, the actual results may vary from those estimated.

The conclusion and opinions found in this report are made expressly subject to the following conditions and stipulations:

- The most likely purchaser of the System is assumed to be an investor-owned utility (IOU) capable of demonstrating the acquisition of the local government utility is in the public interest so that they may establish rate base using fair value as described in §62-133.1A of the North Carolina General Statutes.
- Extraordinary Assumptions³
 - The purchaser of the System can and would maintain or extend the useful life of the existing System through rehabilitation and good maintenance practices. NewGen assumes that with the right operating regime, maintenance plan, rehabilitation investments, and retirement and replacement of assets that have exceeded their useful service lives, the existing System can continue in service without significant service interruption or costly emergency repair.
 - NewGen used the Draper Aden Associates engineer report to allocate the book value of the System into different asset categories based on their weight relative to the overall system provided by the engineer's report. The book value of the System as of June 30, 2021 was provided by Carteret County in their Water System Audit FY21. NewGen applied an additional half year of depreciation to calculate the book value of the System as of January 1, 2022. This is described in greater detail later in the report.
- No soil analyses or geological studies were ordered or made in conjunction with this report, nor were any investigations of oil, gas, coal, or other subsurface mineral and use rights or conditions.
- No responsibility is assumed by NewGen for matters that are legal in nature, nor does NewGen render any opinion as to the title, land and/or land rights, which are assumed to be good and marketable. No opinion is intended to be expressed for matters that would require specialized investigation or knowledge beyond that normally used by an appraiser engaged in valuing the type of System described in this report.

³ Extraordinary assumptions, in the context of this analysis, are statements that are believed to be true but, if found to be false, could alter the opinions or conclusions of value. (USPAP Definitions)

Section 2

- NewGen made no determination as to the validity, enforceability, or interpretation of any law, contract, rule, or regulation applicable to the System or its operation. However, for the purposes of this report, NewGen assumed that all such laws, contracts, rules, and regulations will be fully enforceable in accordance with their terms as NewGen understands them and that the operators of the System will operate the System in accordance with all applicable laws, contracts, rules, and regulations. NewGen assumed that the System conforms to all applicable zoning and use regulations and restrictions.
- We assume there are no hidden conditions that would make the System more or less valuable.
- NewGen assumed the purchaser of the system would maintain the Verizon Annual Land Rental agreement, resulting in \$26,400 of non-rate revenue escalated annually at 2 percent.
- All existing liens and encumbrances have been disregarded and the value of the System was appraised as though free and clear and under responsible ownership.
- Mr. Mike Lane, Partner at NewGen, performed a limited field review of the System on April 29, 2022. Mr. Lane was accompanied by representatives from the Public Staff. Based on Mr. Lane's observations of the visible equipment, and discussions with the Public Staff, the System's assets seem in average condition for plants of comparable type and age.
- NewGen assumes the System has been, and will continue to be, operated in a reasonable and prudent manner consistent with industry practice.
- Substances contained in building structures such as asbestos, chemicals, toxins, wastes, or other potentially hazardous materials could, if present, adversely affect the value of the System. Unless otherwise stated in this report the appraiser did not consider the existence of hazardous substances, which may or may not be present at the System, in the development of the conclusion regarding FV. The stated value estimates are predicated on the assumption that there is no material at the System that would cause such a loss in value and, as such, are likely to represent the highest reasonable value of the System.
- Certain data and assumptions have been provided by third parties, including, but not limited to, historical costs, active connection counts, historical production volumes, plant balances, and replacement cost values for the System. NewGen reserves the right to adjust the results in this report as may be required by changes to these third-party assumptions.
- NewGen relied on data in Draper Aden Associates Engineering Assessment – Update to Present Value of Water System report, dated March 2022 and the Carteret County Water System Audit FY21, to develop indicators of value under the cost approach and to estimate future capital expenditures under the income approach.
- NewGen has not been made aware of any private easements owned by the System. Easements are assumed to be in the public right of way and not owned by the System. NewGen assumed the County has all easements necessary for the System to operate and, therefore, assigned no value to easements in this appraisal.
- NewGen estimated the value of the System irrespective of the source of capital used to construct the System (e.g., assumes no special treatment for contributed capital), consistent with the provisions in §62-133.1A of the North Carolina General Statutes.
- For the purpose of developing an opinion of the value of the System, NewGen assumed income taxes based on a Federal corporate income tax rate of 21 percent, which is the marginal Federal corporate

Assumptions, Considerations and Limiting Conditions

tax rate in effect at the date of valuation and a State corporate income tax rate of 2.5 percent, which is the marginal North Carolina corporate tax rate in effect at the date of valuation.

- NewGen applied a .55% state property tax rate to assessed property values to calculate taxes other than income tax.
- Under the income approach, the discount rate used to calculate the net present value of the projected cash flow stream is equal to the weighted average cost of capital for a typical purchaser of the System, rather than any actual financing associated with the System. For the purposes of this appraisal report, NewGen assumed the typical purchaser for the System would be a taxable entity, with a capital structure similar to that of an IOU. NewGen assumed that the capital structure of a typical purchaser will remain constant throughout the study period and will be made up of 48.9 percent debt and 51.1 percent equity (as shown in Exhibit 2, Tables D and G).
- The cost of debt used to develop the discount rate is assumed to be 4.29 percent based on an analysis of recent corporate bond interest rates (as shown in Exhibit 2, Tables D and G).
- It was assumed that a typical purchaser of the System would seek a return on capital similar to that of an IOU. For the analysis included in this report, NewGen assumed the return on equity to be used in the calculation of the discount factors to be 12.0 percent for the System (as shown in Exhibit 2, Tables C and F, respectively).
- The discount rate used in the appraisal report to determine the net present value of cash flow streams is based on the average of the Weighted Average Cost of Capital (WACC) developed using the Capital Asset Pricing Model (CAPM) using CRSP and Kroll risk premia approaches. The WACC developed using the CRSP risk premia is 7.8 percent. The WACC developed using the Kroll risk premia is 7.7 percent. The average of the two approaches, resulting in a WACC of 7.8 percent, was used in the analysis. Both the Kroll and CRSP risk and size premia are generally accepted approaches to estimating the cost of equity for IOUs that are not actively traded on a public exchange. NewGen did not find evidence to indicate that either of the cost of equity approaches should be rejected. The calculation of the discount rate is shown in Exhibit 2.
- NewGen recognizes that the current COVID-19 pandemic has resulted in unprecedented economic impacts and associated risks for companies that operate in certain sectors. This risk has an impact on the general interest rate environment. NewGen assumes that water utilities are not as susceptible to economic risk as some other industries, such as airlines or restaurants. For example, even if uncollectible accounts become elevated, there are mechanisms available to a regulated IOU to mitigate the financial harm of such circumstances. Thus, NewGen assumed it was reasonable not to make an additional adjustment to the risk premia for COVID in the WACC calculation.
- NewGen assumed a reasonable long-term inflation rate for the Subject Property to be 5.9 percent in 2022, 3.0 percent in 2023, 2.3 percent in 2024, and 2.1 percent for the rest of the study period based on the long-range consensus forecast of the Chained Gross Domestic Product as published in the December 10, 2021, issue of the *Blue Chip Economic Indicators* (Volume 37, Number 4). This long-range forecast is supported in a more recent report by *Blue Chip Economic Indicators* published in the March 11, 2022 report (Volume 47, No. 3).

Section 2

- NewGen assumed that the January 2021 connection counts escalated by one year of growth, for the System, provided by Draper Aden Associates, are an accurate representation of the total number of active connections across the System. NewGen escalated the active connection count annually by 1.13 percent⁴. This assumption is supported by the Capital Improvements DR Response Exhibit 4. This results in approximately 149 additional connections on the System at the end of the study period.
- NewGen relied on reported industry benchmarks⁵ escalated to 2022 dollars to establish a reasonable approximation of future annual operations and maintenance expenses that a potential purchaser would be likely to incur.
- Assumed useful lives for assets are based on the Draper Aden Associates engineering report.
- Assumed date in-service for assets on the System are based on the estimates provided in Draper Aden Associates engineering report.
- NewGen estimated plant additions and retirements based on the R2 Iowa Survivor Curve and the useful lives discussed above. NewGen applied the R2 Survivor Curve to develop a mortality dispersion and retirement frequency analysis for the System's plant accounts. The R2 Survivor Curve is commonly used in the mortality studies of utility property. The R2 Survivor Curve was applied to the original cost of each asset to calculate the annual retirements. The R2 Survivor Curve was applied to the replacement cost of each asset to calculate annual additions. The annual additions are escalated by inflation.
- The maximum amount of assumed accumulated depreciation under the cost approach analysis was 90 percent, leaving 10 percent of the estimated original cost value for older plant that has survived beyond the assumed useful life.
- For the Discounted Cash Flow (DCF) analysis in the income approach, a 2 percent annual depreciation rate was assumed for water plant assets and a 1.7 percent annual depreciation rate was assumed for distribution system assets. This assumption is based on the estimated useful lives and asset values provided in the Draper Aden Associates Engineering Report⁶. NewGen assumes the estimated depreciation rates are a reasonable representation of the average rate for existing plant that is not fully depreciated.
- Operating expenses were generally escalated at the long-term inflation rate described above per year, except water treatment and potable water service costs, which, in addition to inflation, are also increased in proportion to the assumed connection growth.
- For the purposes of performing the DCF analysis under the income approach, NewGen employed a 10 year study period (2022 to 2031).
- For the purposes of performing the valuation, NewGen assumed that a potential purchaser of the System would be able to operate the System in accordance with contractual terms and conditions of any existing contracts, and that any agreements, rights and easements would be assigned to the potential purchaser.
- Individuals affiliated with NewGen and contributing to this report are Mr. Mike Lane, ASA, Partner, Mr. Zachary Wright, ASA, Manager, and Mr. Nick Coomer, Consultant. Guidance on replacement costs, deficiencies, engineering assessments and descriptions of the System were provided by Dr. Steven Gandy, PhD, P.E. of Draper Aden Associates.

⁴ Annual growth rate from Capital Improvements DR Response Exhibit 4

⁵ 2019 AWWA Utility Benchmarking, Appendix B: FY18 Performance Summary by Type, page 173.

⁶ Draper Aden Associates Engineering Report dated March 2022

Section 3

PLANT DESCRIPTION AND CONDITION ASSESSMENT

Description of the Subject Properties

The description of the Subject Property was developed in coordination with information provided by Draper Aden Associates in its March 2022, report titled, "Update to Present Value of Water System" (attached as Exhibit 3).

Subject Property Location and Site Characteristics

The Subject Property is owned by Carteret County and serves 1,253 customers⁷ within its service area.

The System relies on two groundwater wells for water supply. Water from the first well is treated at the Laurel Road Water Treatment Plant before it is pumped to three (3) elevated storage tanks for distribution within the community. These storage tanks are located with water lines extending to the Craven County line along NC Highway 101 and into the Mill Creek area. There are also water lines extending from the Beaufort Town limits along Highway 70 to East Carteret High School and along Merrimon Road to Laurel Road.

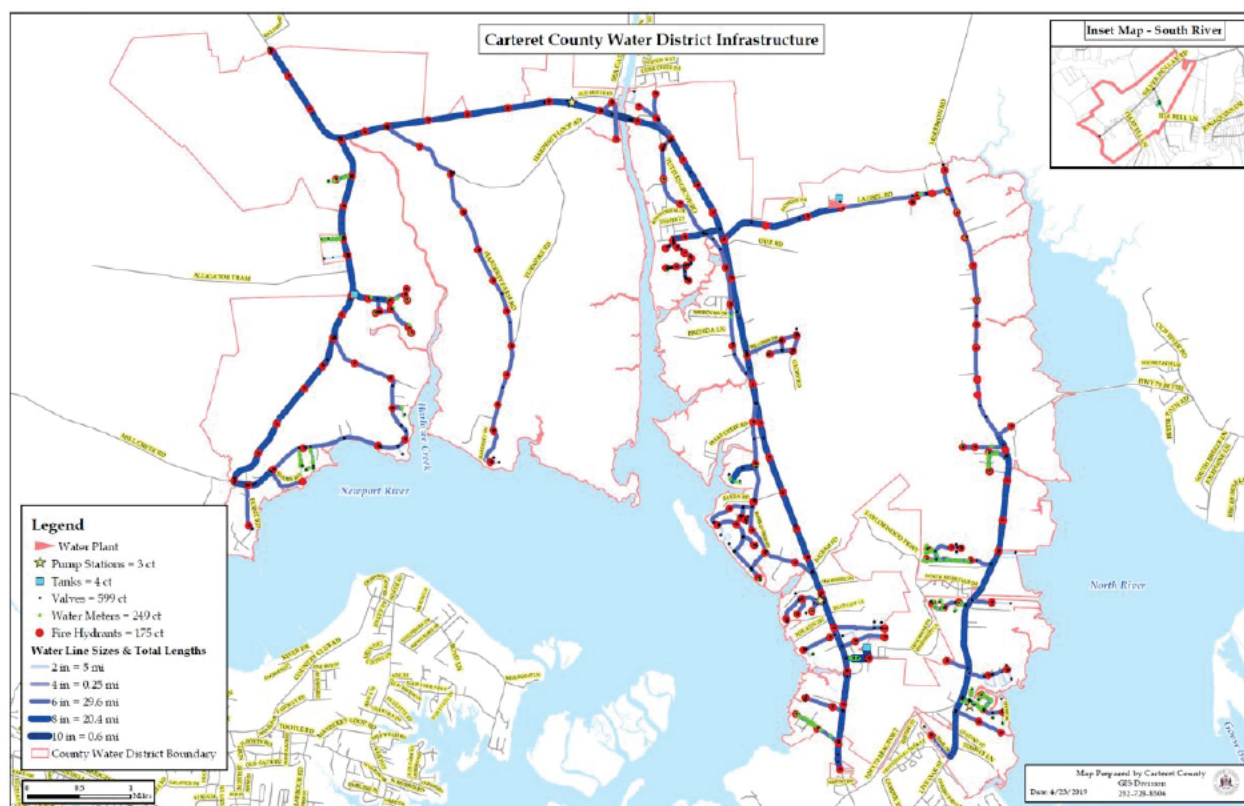
The System also includes a small water system approximately 20 miles north of Laurel Road and Merrimon Road intersection. This small system known as Merrimon Water System (MWS), serves approximately 25 – 30 customers. MWS receives water from the Jonaquins Creek well that consists of a well and an above-ground storage tank.

Figure 3-1 is a map showing the System's infrastructure.

⁷ January 2021 Connection Count provided by the Draper Aden Associates Engineering Report dated March 2022

Section 3

Figure 3-1 Carteret County Water System Infrastructure



Source: Draper Aden Associates Engineering Report

Condition of the System

NewGen performed a limited field review of the System for appraisal purposes to identify and observe the condition of the readily accessible portions of the System, which were limited to visual and external observations only. Based upon our observations, discussions with the Public Staff, and review of the Draper Aden Associates Engineering Report, the System's assets appear to generally be in average condition for plant of comparable type and age. NewGen assumes that with the right operating regime, maintenance plan and rehabilitation investments, as identified in the income approach, the existing System can continue in service without significant service interruption or costly emergency repair.

OFFICIAL COPY

Oct 14 2022

Section 4

FAIR VALUE ANALYSES

Introduction

There are three generally accepted valuation approaches that can be used to estimate the FV of the System: the cost approach; the income approach; and the sales comparison approach. Based on studies and analyses of the System, NewGen believes that all applicable approaches to valuation should be considered.

The premise of value selected for this appraisal is FV in continued use.

Cost Approach

The cost approach is based on the premise that an informed buyer would pay no more than the cost of producing a substitute property with the same function or utility as the property being valued. Two indicators of value that are commonly considered under the cost approach when valuing regulated public utility property are the original cost less accumulated depreciation (OCLD) value and the replacement cost new less accumulated depreciation (RCNLD) value.

OCLD is defined as the original cost of the property when it was first put into service as a public utility, less accumulated depreciation. The OCLD value is equal to the net book value of the property without accelerated depreciation. In this analysis, OCLD was estimated using the book value of the System provided by Carteret County in their most recent audited statement. For rate regulated utility property, the OCLD value is a relevant indicator of value because it is generally an approximation of the rate base value of the property, which is the value of the property on which the regulated utility is allowed to earn a return.

RCNLD is defined as the cost of reproducing a new replica of the property at current prices with the same or closely related materials, less accumulated depreciation. In contrast, replacement cost is defined as the current cost of a similar new property having the nearest equivalent utility as the property being appraised. Since there have not been recent major changes in the way water systems are constructed, there is typically not a significant difference between replacement cost and reproduction cost, and the terms are often used interchangeably for appraisal purposes. Although this method indicates the cost of building a comparable facility at present prices, it generally does not consider the inherent risk of construction and ownership, such as design defects, economic delays, cost overruns and natural disasters.

The cost approach indicators of value are adjusted for depreciation, which is the estimated loss in value of an asset, compared with a new asset. There are three basic types or causes of depreciation:

- **Physical deterioration** – The loss in value or usefulness resulting from the wear and tear of an asset in operation and exposure to various elements.
- **Functional obsolescence** – The loss in value or usefulness caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient or less costly replacement property that new technology has developed.

Section 4

- **Economic obsolescence** – The loss in value caused by factors external to the property.⁸

The estimated OCLD and RCNLD values of the System developed in this appraisal reflect an adjustment for physical deterioration, but not functional or economic obsolescence.

The Draper Aden Associates report did not identify the presence of Functional Obsolescence in the System. The System could be subject to economic obsolescence based on utility rate regulation, which restricts the earnings of the utility to an allowed rate of return times rate base. However, for the purpose of estimating FV, NewGen did not make a specific adjustment for economic obsolescence under the cost approach. The relationship between the OCLD (approximation of rate base) value and income value for regulated utility property will be discussed later in the report.

OCLD

The development of OCLD is shown in Exhibit 1, Table 1. NewGen utilized the replacement cost new (RCN) as developed for personal property by the engineer, Draper Aden Associates, and the replacement cost for real property based on the current assessed value for land, as reported by the Carteret County Property Record Card Search.⁹ The RCN values were used to allocate the net book value and original cost of the plant as recorded by Carteret County¹⁰ to the asset list identified in the engineering report.

Based on the assumed age of the assets and their assumed useful lives provided by the Draper Aden Associates Engineering Report, accumulated depreciation was estimated to reflect physical deterioration. If some of the assets are beyond their assumed useful life, regardless of their age, it was assumed that if an asset is still in service it still has value. Thus, the maximum amount of accumulated depreciation assumed in the analysis was 90 percent, leaving 10 percent of the estimated original cost value for each asset that is in service beyond its assumed useful life.

OCLD is equal to the net book value recorded on Carteret County's most recent water system audit plus an additional half year of depreciation to calculate the January 1, 2022 net book value, except for land value which is calculated using the real property value trended back to the earliest in-service asset date using the Consumer Price Index, as described in the extraordinary assumption mentioned above. The difference between the allocated original cost and OCLD results in accumulated depreciation for each asset.

RCNLD

The development of RCNLD is shown in Exhibit 1, Table 2. NewGen utilized the original cost provided by Carteret County plus an additional half year of depreciation to estimate the RCN. The Original Costs were trended forward to estimate the replacement cost if the asset was installed January 1, 2022 using the appropriate age of each asset and cost inflation index. The primary cost inflation index used for this purpose was the Handy Whitman Index of Public Utility Construction Costs (Handy-Whitman) for water utility assets in the South Atlantic Region (W-2), which provides data for most types of water assets. NewGen used the Consumer Price Index to trend the real property instead of the Handy-Whitman Index, as Handy-Whitman is a construction cost index and does not have data for land and land rights.

Subtracting the calculated accumulated depreciation from estimated replacement cost results in RCNLD.

⁸ American Society of Appraisers, *Valuing Machinery and Equipment*, Second Edition, pages 66-67.

⁹ Assessed real property value according to Carteret County Property Record Card Search for the System, for the most recent tax year available.

¹⁰ Water System Audit FY21 – Carteret County; Carteret County Depreciation Schedule

Again, the maximum amount of accumulated depreciation assumed in the analysis was 90 percent, leaving 10 percent of the estimated RCN value for each asset that is in service beyond its assumed useful life. NewGen then subtracted the accumulated depreciation from each item on the asset list to reflect physical deterioration based on age. NewGen utilized the current assessed value for real property for the RCN, as outlined in the OCLD discussion above.

NewGen tested for the presence of economic obsolescence by comparing the income approach value and the RCNLD and found that some economic obsolescence does exist. The value estimated in the income approach (see Table 4-3) is less than the RCNLD value. This represents, in some part, the impact of rate regulation on value. However, the RCNLD value shown in Table 4-1 does not include an adjustment for economic obsolescence.

The indicators of value under the cost approach are summarized in Table 4-1.

Table 4-1
Cost Approach

Item	Indicator of Value
Original Cost Less Depreciation	\$ 5,750,000
Replacement Cost New Less Depreciation *	\$ 13,032,000

* Excludes adjustment for economic obsolescence

Note: Table values may not equal exhibit values due to rounding to the nearest \$1,000

Sales Comparison Approach

The guideline transaction method under the sales comparison approach involves the review of recent sales of similar facilities between a willing buyer and a willing seller, who are unrelated, as an indication of the market price for such facilities. The guideline transaction method is primarily applicable to property that is readily substitutable and where a number of similar type properties have recently been sold. Caution must be exercised when using the sales comparison approach as an indicator of value for utility property. Normally, adjustments are made to the guideline sales transactions in order to correlate the sales price to the characteristics of the property being valued. However, there are many factors that can influence sales price including, among others, market area, growth prospects, age, and other considerations that may be reflected in the sales price. Each party's motivation can affect the negotiation and the terms of the sale. Strategic objectives are the driving motivator for some sales. These objectives are often kept confidential and are not available to an appraiser for evaluation. For this reason, NewGen generally uses the comparable sales method as a test of the reasonableness of values produced by the cost and income approaches.

Exhibit 1, Table 3 shows select sales transactions involving utility property in Texas, Illinois, Indiana, Pennsylvania, Washington, and Idaho that occurred from 2009 through 2021. There is a wide variation in the size, location, customer growth prospects, and type of plant for these sales and no attempt was made to adjust the sales to correlate with the characteristics of the System as doing so would be impractical. The diversity in the geography and marketplaces further reduces the applicability of these transactions to the System. There is not enough publicly available data about the transactions to place any significant weight on the guideline transaction method.

Examining the ratio of sales price to book value (OCLD) provides insight into the valuation of property between regulated utilities in willing buyer/willing seller transactions. The median ratio from the sales transactions (where book value was available) results in a sales price equal to 1.31 times book value. For

Section 4

rate regulated utilities, the book value of plant assets typically is the largest component of a utility’s rate base. The effect of utility rate regulation on value is discussed under the Income Approach in this section.

The sales price per customer is another metric that can be evaluated but should be used with caution as it can be misleading. For example, this metric may understate the value of systems that have made significant investments in facilities that will serve a much larger customer base than is currently being served. Nonetheless, the median ratio from the sales transactions (where number of customers was available) results in a sales price equal to \$2,000 per connection.

Table 4-2 shows these metrics as applied to the System under the sales comparison approach.

Table 4-2
Sales Comparison Approach

Metric	Median	Indicator of Value
Sales Price / OCLD	1.31	\$ 7,527,000
Sales Price / Customer	\$ 2,000	\$ 2,506,000

Note: Table values may not equal exhibit values due to rounding to the nearest \$1,000
The Sales Comparison Approach was not relied upon as an indicator of value, as discussed further in the following section of this report.

Income Approach

The income approach estimates the value of property by capitalizing or determining the present worth of anticipated economic benefits from the property as a going concern. Under this approach, the direct economic benefits derived from continued ownership of the property being valued are expressed in terms of free cash flow, which represents the total cash flow generated by the going concern that is available to the providers of both debt and equity capital.

The calculation of free cash flow is illustrated as follows:

- (1) Annual Operating Revenues
- (2) Less: Annual Operating Expenses
- (3) Equals: Pre-tax Net Operating Income
- (4) Less: Income Taxes
- (5) Equals: Earnings Before Interest, Depreciation & Amortization (EBIDA)
- (6) Less: Future Capital Expenditures
- (7) Less: Net Changes in Working Capital
- (8) Equals: Free Cash Flow

Under the discounted cash flow (DCF) method, the income indicator of value is equal to the sum of the present value of the projected free cash flows plus the present value of the projected terminal value. In this analysis, the series of annual free cash flows from 2022 to 2031 was discounted to the date of value using a 7.8 percent discount rate, which is equal to the WACC developed in Exhibit 2. For the terminal (or residual) value, the projected free cash flow in year 2031 was capitalized into perpetuity at the discount rate less a growth rate equal to 2.1 percent, which is the projected rate of growth in earnings, and then discounted back to 2022.

Effect of Utility Rate Regulation on Value

When estimating the value of regulated utility property, it is important to understand utility rate regulation and how regulated utility rates are generally determined. In exchange for being granted the right to be the monopoly service provider, the utility agrees to have its rates regulated by the state public utilities commission, in this case the North Carolina Utilities Commission.

Under utility rate regulation, a utility is allowed to charge rates that produce forecasted revenues equal to the utility's total revenue requirement. The term "revenue requirement" refers to the utility's total cost of serving its customers, including the opportunity to earn a reasonable rate of return on invested capital. Under the utility basis of ratemaking used by IOUs and adopted by the North Carolina Utilities Commission, the total revenue requirement is generally equal to the utility's reasonable operating expenses, depreciation expense, taxes, and the utility's authorized rate of return times rate base.

Rate base is the value of property on which a utility is allowed to earn its authorized rate of return and is generally equal to the original cost less accumulated depreciation (OCLD) value of the utility's plant in service, plus miscellaneous items, such as working capital, materials and supplies, and minus miscellaneous items, such as customer advances and deferred taxes. The utility's authorized rate of return is developed based on a weighted average cost of capital (WACC).

As a result of rate regulation, and the way utility rates are developed, the income value of regulated utility property is typically related to the rate base value of the property, as described below.

The income approach estimates the value of property by capitalizing or determining the present worth of anticipated economic benefits from the property as a going concern. Under the direct capitalization of earnings method, the income value of the property is estimated by capitalizing (i.e., dividing) the net income associated with the property for a one-year period by an appropriate capitalization rate. This is shown in Equation (1) below:

$$(1) \quad \text{Value} = \frac{(\text{Revenues} - \text{Expenses})}{\text{Capitalization Rate}}$$

The capitalization rate shown in Equation (1) is equal to the WACC for a hypothetical buyer of the property less assumed growth in earnings. In theory, the income value for a regulated utility should approximate its rate base value since this is the value of the utility's investment on which it is allowed to earn its authorized rate of return. Further, generally speaking, the largest contributor to rate base is OCLD.

Under cost-of-service ratemaking procedures, utility rates are designed to produce revenues that recover the utility's expenses (including depreciation and taxes) plus a return on rate base, as shown in Equation (2) below:

$$(2) \quad \text{Revenues} = \text{Expenses} + (\text{Rate of Return})(\text{Rate Base})$$

Equation (2) can be restated as follows:

$$(3) \quad \text{Rate Base} = \frac{(\text{Revenues} - \text{Expenses})}{\text{Rate of Return}}$$

By comparing Equations (1) and (3), one can see that the capitalized income value for regulated utility property is generally equivalent to its rate base value with an adjustment for expected future growth.

Under the principle of substitution, an informed buyer would pay no more than the cost of producing a substitute property with the same utility as the property being valued. However, an informed buyer would generally also pay no more than the income value of the property. Therefore, in the case of rate regulated utility property, the income value is generally close to the rate base (approximately OCLD) value, assuming that utility rates are based on cost of service. This is because the net income (return) a utility can earn is

Section 4

determined based on the utility's authorized rate of return multiplied by the value of its rate base, which is primarily composed of OCLD.

Discounted Cash Flow Analysis

NewGen developed a regulated retail revenue requirement for the System and performed a DCF analysis to identify the income value for the System. The revenue requirement developed for the System is shown in Exhibit 1, Table 6; the WACC analysis used to develop the discount rate is shown in Exhibit 2; and the DCF analysis is shown in Exhibit 1, Table 8. The income approach reflects how most rate regulated utility property is valued (shown in Table 4-3). These results are discussed further in Section 5 of this report.

Alternative Scenario

NewGen understands that the purchaser of this system is Carolina Water Service, Inc (CWS), and that CWS' approved rate of return is approximately 7.14%. An alternate scenario analyzing the indicator of value under the income approach using the CWS' approved rate of return results in a value of \$7,592,000. To develop an opinion of fair value under the income approach, NewGen relied on the estimated weighted average cost of capital for a hypothetical purchaser, as discussed in greater detail in Section 2 of this report. Utilizing the approved rate of return for a specific IOU would indicate the investment value of the System and not the fair value. For this reason, NewGen did not consider this alternative scenario when determining the fair value of the System.

Table 4-3
Income Approach

Item	Indicator of Value
Discounted Cash Flow (DCF) Analysis	\$ 7,332,000

Note: Table values may not equal exhibit values due to rounding to the nearest \$1,000

Section 5 CONCLUSIONS

Discussion

Cost Approach

The premise of the cost approach is that an informed buyer would pay no more than the cost of producing a substitute property with the same function or utility as the property being valued. Further, for rate regulated utility property, the OCLD value is important as it is the primary component of traditionally developed rate base.

Sales Comparison Approach

It is often difficult or impossible to properly adjust utility comparable sales transactions to match the characteristics of utility property being valued. The number of critical factors that influence utility property values are numerous, and the terms of some transactions that impact value are kept confidential, preventing consideration of all relevant factors by appraisers. Nonetheless, the sales comparison approach can be a useful means to confirm conclusions from the other two approaches to estimate value.

In the case of water systems, and utilities in general, comparing sales of systems is a very difficult undertaking. No two utilities are exactly alike – the technologies employed differ; the customer composition, use, and growth all differ; and the regulatory environments sometimes differ. These potential differences make the adjustment necessary to compare two different utilities exceedingly difficult under the Sales Comparison Approach. For example, the Carteret County Water System has a significantly lower than average customer density, resulting in an indicated value based on the median sales price per customer to be 3 times lower than the indicated value based on the median sales price to book value ratio. This highlights the fundamental difficulties of the sales comparison approach. Further, the motivation of each party to a transaction can affect the negotiation and the terms of sale. For instance, strategic objectives are sometimes the driving motivator for transactions. These objectives are often kept confidential and, therefore, are not available to an appraiser for evaluation. Thusly, few public utility appraisers rely heavily on the Sales Comparison Approach.

NewGen did not rely upon the sales comparison approach due to the overall lack of comparable, complete transaction data. While the information from this approach is presented in this report, it is important to note that no weight was placed on the sales comparison approach as an indicator of value due to the weaknesses identified.

Income Approach

The income approach value developed in this appraisal is within the range of results from the cost approach. NewGen often finds the indication of value under the income approach for rate regulated property is greater than the OCLD value due to the property's opportunity to earn an approved rate of return on rate base and expected future growth in earnings. The range is most commonly between 1.2 to 1.5 times OCLD, and the income approach value of the System is within this range at approximately

Section 5

1.28 times OCLD. The indicator of value under the income approach is lower than the RCNLD indication of value, which also indicates the presence of some economic obsolescence due to rate regulation.

Fair Value

After careful consideration of the indicators of value developed under the various approaches, given the relative strengths and weaknesses of each, and based on our studies and analyses and the assumptions used therein, including the information provided by others upon which we have relied, we are of the opinion that a purchaser would be willing to purchase the System for a price reflective of the value of all prospective future cash flows, which is represented by the income approach to value.

A buyer, evaluating the System on a purely financial basis, should not be willing to pay more than the income value unless external factors specific to the buyer's situation are influencing the purchase, which would be at odds with the definition of FV. Therefore, we are of the opinion that the indication of value for the System under the income approach best represents the FV of the System.

The results of our analyses to estimate the FV of the System as of January 1, 2022, are summarized in Table 5-1.

Table 5-1
Summary of Value Indicators

	Value Indicators
Cost Approach	
OCLD	\$ 5,750,000
RCNLD *	\$ 13,032,000
Sales Comparison Approach	Not relied upon
Income Approach	
DCF	\$ 7,332,000
Fair Market Value	\$ 7,332,000

* Excludes adjustment for economic obsolescence

Note: Table values may not equal exhibit values due to rounding to the nearest \$1,000

Section 6

APPRAISAL CERTIFICATION

I, the undersigned, certify that, to the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding the agreement to perform this assignment.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.
- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the Client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice (2020-2021 Edition) (extended through December 31, 2022)*.
- Mr. Mike Lane made a personal inspection of the property that is the subject of this report on April 29, 2022
- Mike Lane, ASA (Partner at NewGen), Zak Wright, ASA (Manager at NewGen), and Nick Coomer (Consultant at NewGen) provided significant personal property appraisal assistance to the person signing this certification.

Respectfully Submitted,

NewGen Strategies & Solutions, LLC

DocuSigned by:

6387C69774AD4F9...
Mike Lane, ASA
July 7, 2022



NewGen
Strategies & Solutions

OFFICIAL COPY

Oct 14 2022



EXHIBIT 1: APPRAISAL ANALYSES

REPORT

**FAIR VALUE APPRAISAL OF THE
WATER SYSTEM IN CARTERET COUNTY**



Carteret County Water System
Cost Approach
Original Cost Less Depreciation - Water System
Table 1

Line No.	System / Asset Description	Date In Service [1]	Engineer Replacement Cost [2]	Engineer Cost Allocation % [3]	Original Cost [4]	Expired Life (%) [7]	Accumulated Depreciation	Original Cost Less Depreciation (OCLD) [5]
	(c)	(d)				(p)	(r)	(s)
Carteret County Water System								
1	Water Plant							
2	Booster Pump 1	2012	\$ 250,000	0.99%	\$ 120,230	53.7%	\$ 64,510	\$ 55,719
3	Booster Pump 2	2012	300,000	1.18%	144,275	53.7%	77,413	66,863
4	Booster Pump 3	2012	300,000	1.18%	144,275	53.7%	77,413	66,863
5	Water Tank 1	1988	850,000	3.35%	408,780	53.7%	219,336	189,445
6	Water Tank 2	2012	900,000	3.55%	432,826	53.7%	232,238	200,589
7	Water Tank 3	2012	1,000,000	3.94%	480,918	53.7%	258,042	222,876
8	SCADA System	2012	150,000	0.59%	72,138	53.7%	38,706	33,431
9	Well House	2012	350,000	1.38%	168,321	53.7%	90,315	78,007
10	Jonaquins Creek Well House and Storage	2012	564,204	2.22%	271,336	53.7%	145,588	125,748
11	Fire Hydrants	2012	500,000	1.97%	240,459	53.7%	129,021	111,438
12	Water Treatment Plants	2012	2,000,000	7.89%	961,836	53.7%	516,084	445,752
13	Total Water Plant		\$ 7,164,204		\$ 3,445,395		\$ 1,848,665	\$ 1,596,730
14	Distribution System							
15	2" PVC	1988	\$ 924,000	3.64%	\$ 444,368	53.7%	\$ 238,431	\$ 205,938
16	4" PVC	1988	59,400	0.23%	28,567	53.7%	15,328	13,239
17	6" PVC	1988	9,095,280	35.87%	4,374,085	53.7%	2,346,964	2,027,121
18	6" Ductile	1988	305,500	1.20%	146,920	53.7%	78,832	68,089
19	8" PVC	1988	7,313,390	28.84%	3,517,142	53.7%	1,887,161	1,629,980
20	8" Ductile	1988	242,625	0.96%	116,683	53.7%	62,607	54,075
21	10" PVC	1988	253,440	1.00%	121,884	53.7%	65,398	56,486
22	Total Distribution System		\$ 18,193,635		\$ 8,749,648		\$ 4,694,721	\$ 4,054,927
23	Real Property [8]							
24	Laurel Road Aerial Tank	1988			\$ 10,688	0.0%	\$ -	\$ 10,688
25	Laurel Road Treatment Plant	1988			24,050	0.0%	-	24,050
26	Jonaquins Creek Water House	1988			7,588	0.0%	-	7,588
27	Taylor Farm Elevated tank	1988			12,741	0.0%	-	12,741
28	Booster Pump Station #1	1988			17,055	0.0%	-	17,055
29	Booster Pump Station #2	1988			9,270	0.0%	-	9,270
30	Booster Pump Station #3	1988			8,070	0.0%	-	8,070
31	Mayflower Drive Elevated Tank	1988			8,665	0.0%	-	8,665
32	Total Real Property				\$ 98,126		\$ -	\$ 98,126
33	Carteret County Water System - Total		\$ 25,357,839		\$ 12,293,170		\$ 6,543,386	\$ 5,749,784

Footnotes:

- [1] Assuming Month and Day in service are July 1st for each asset
 [2] Replacement cost estimates according to Draper Aden Associates Engineering report dated March 2022
 [3] Allocation percentage of Draper Aden Associates Engineering report to each line item
 [4] Original Cost from Carteret County Audit FY21, Costs are allocated based off of the Draper Aden Associates Engineering report dated March 2022
 [5] Assuming a standard 365 day year (rounded to the nearest whole year)
 [6] Based on NewGen's experience appraising similarly-sized systems, Draper Aden Associates Engineering Report, depreciation study work and testimony, etc.
 [7] Expired life is equal to total system depreciation % according to Carteret County Depreciation Schedule
 [8] Date in Service based on the year of the oldest installed assets according to asset inventory in Draper Aden Associates Engineering Report. Reproduction value is assumed equal to Carteret County's property records. Book value of land is trended to estimated original cost using CPI.

OFFICIAL COPY

Oct 14 2022

Carteret County Water System
Cost Approach
Replacement Cost Less Depreciation
Table 2

Handy Whitman Cost Index

Line No.	System / Asset Description (c)	Date In Service [1] (d)	Original Cost [2] (e)	Age as of January 1, 2022 [3] (h)	Line Number	Install Year	Current	Index Factor	Replacement Cost (e)	Useful Life [4] (i)	Annual Depreciation (%) (j)	Expired Life (%) [5] (k)	RCN Annual Depreciation (l)	RCN Accumulated Depreciation (m)	Replacement Cost New Less Depreciation (RCNLD) (n)
Carteret County Water System															
Water Plant															
1	Booster Pump 1	2012	\$ 120,230	9.5	9	788	1,451	1.84	\$ 221,451	50	2.0%	19.0%	\$ 4,429	\$ 42,076	\$ 179,376
2	Booster Pump 2	2012	\$ 144,275	9.5	9	788	1,451	1.84	\$ 265,742	50	2.0%	19.0%	\$ 5,315	\$ 50,491	\$ 215,251
3	Booster Pump 3	2012	\$ 144,275	9.5	9	788	1,451	1.84	\$ 265,742	50	2.0%	19.0%	\$ 5,315	\$ 50,491	\$ 215,251
4	Booster Pump 3	2012	\$ 144,275	9.5	9	788	1,451	1.84	\$ 265,742	50	2.0%	19.0%	\$ 5,315	\$ 50,491	\$ 215,251
5	Water Tank 1	1988	\$ 408,780	33.5	23	220	913	4.15	\$ 1,696,439	50	2.0%	67.0%	\$ 33,929	\$ 1,136,614	\$ 559,825
6	Water Tank 2	2012	\$ 432,826	9.5	23	798	913	1.14	\$ 495,046	50	2.0%	19.0%	\$ 9,901	\$ 94,059	\$ 400,987
7	Water Tank 3	2012	\$ 480,918	9.5	23	798	913	1.14	\$ 550,051	50	2.0%	19.0%	\$ 11,001	\$ 104,510	\$ 445,541
8	SCADA System	2012	\$ 72,138	9.5	8	500	671	1.34	\$ 96,906	20	5.0%	47.5%	\$ 4,845	\$ 46,030	\$ 50,876
9	Well House	2012	\$ 169,321	9.5	8	500	671	1.34	\$ 226,113	50	2.0%	19.0%	\$ 4,522	\$ 42,962	\$ 183,152
10	Jonaquins Creek Well House and Storage	2012	\$ 271,336	9.5	8	500	671	1.34	\$ 364,497	50	2.0%	19.0%	\$ 7,290	\$ 69,254	\$ 295,243
11	Fire Hydrants	2012	\$ 240,459	9.5	42	693	1,158	1.67	\$ 401,923	60	1.7%	15.8%	\$ 6,699	\$ 63,638	\$ 338,285
12	Water Treatment Plants	2012	\$ 961,836	9.5	8	500	671	1.34	\$ 1,292,076	50	2.0%	19.0%	\$ 25,842	\$ 245,494	\$ 1,046,582
13	Total Water Plant		\$ 3,445,395						\$ 5,875,985				\$ 119,087	\$ 1,945,618	\$ 3,930,367
Distribution System															
14	2" PVC	1988	\$ 444,368	33.5	38	189	423	2.24	\$ 995,998	60	1.7%	55.8%	\$ 16,600	\$ 556,099	\$ 439,899
15	4" PVC	1988	\$ 28,567	33.5	38	189	423	2.24	\$ 64,028	60	1.7%	55.8%	\$ 1,067	\$ 35,749	\$ 28,279
16	6" PVC	1988	\$ 4,374,085	33.5	38	189	423	2.24	\$ 9,803,983	60	1.7%	55.8%	\$ 163,400	\$ 5,473,890	\$ 4,330,092
17	6" Ductile	1988	\$ 146,920	33.5	35	264	968	3.66	\$ 537,921	65	1.5%	51.5%	\$ 8,276	\$ 277,236	\$ 260,685
18	8" PVC	1988	\$ 3,517,142	33.5	38	189	423	2.24	\$ 7,883,248	60	1.7%	55.8%	\$ 131,387	\$ 4,401,480	\$ 3,481,768
19	8" Ductile	1988	\$ 116,683	33.5	35	264	968	3.66	\$ 427,211	65	1.5%	51.5%	\$ 6,572	\$ 220,178	\$ 207,033
20	10" PVC	1988	\$ 121,884	33.5	38	189	423	2.24	\$ 273,188	60	1.7%	55.8%	\$ 4,553	\$ 152,530	\$ 120,658
21	Total Distribution System		\$ 8,749,648						\$ 19,985,577				\$ 331,856	\$ 11,117,163	\$ 8,868,415
Real Property [8]															
23	Laurel Road Aerial Tank	1988	\$ 10,688	33.5	CPI	119	282	2.38	\$ 25,428		0.0%	0.0%	\$ -	\$ -	\$ 25,428
24	Laurel Road Treatment Plant	1988	\$ 24,050	33.5	CPI	119	282	2.38	\$ 57,220		0.0%	0.0%	\$ -	\$ -	\$ 57,220
25	Jonaquins Creek Water House	1988	\$ 7,588	33.5	CPI	119	282	2.38	\$ 18,054		0.0%	0.0%	\$ -	\$ -	\$ 18,054
26	Taylor Farm Elevated tank	1988	\$ 12,741	33.5	CPI	119	282	2.38	\$ 30,312		0.0%	0.0%	\$ -	\$ -	\$ 30,312
27	Booster Pump Station #1	1988	\$ 17,055	33.5	CPI	119	282	2.38	\$ 40,576		0.0%	0.0%	\$ -	\$ -	\$ 40,576
28	Booster Pump Station #2	1988	\$ 9,270	33.5	CPI	119	282	2.38	\$ 22,055		0.0%	0.0%	\$ -	\$ -	\$ 22,055
29	Booster Pump Station #3	1988	\$ 8,070	33.5	CPI	119	282	2.38	\$ 19,200		0.0%	0.0%	\$ -	\$ -	\$ 19,200
30	Mayflower Drive Elevated Tank	1988	\$ 8,665	33.5	CPI	119	282	2.38	\$ 20,615		0.0%	0.0%	\$ -	\$ -	\$ 20,615
31	Total Real Property		\$ 98,126						\$ 233,460				\$ -	\$ -	\$ 233,460
32	Carteret County Water System - Total		\$ 12,293,170						\$ 26,095,023				\$ 450,943	\$ 13,062,781	\$ 13,032,241

Footnotes:

- [1] Assuming Month and Day in service are July 1st for each asset
 [2] Original Cost from Table 1
 [3] Assuming a standard 365 day year (rounded to the nearest whole year)
 [4] Based on NewGen's experience appraising similarly-sized systems, Draper Aden Associates Engineering Report, depreciation study work and testimony, etc.
 [5] Assets still in service are assumed to have a minimum remaining useful life of 10%

NewGen Strategies & Solutions

Carteret County Water System
Sales Comparison Approach
Table 3

Line No.	Transaction Number (a)	Year of Agreement (b)	State (c)	Application Number [1] (d)	Seller (e)	Purchaser (f)	Utility (g)	Date Finalized (h)	Sales Price (i)	Number of Customers (j)	Price / Customer (k)	OCLD (Book Value) (l)	Price / OCLD (m)
1	1	2009	TX	36569-S	Pecan Utilities, Inc. & Cavern Springs Water Company	Aqua Utilities, Inc. dba Aqua Texas, Inc.	Water	4/25/2011	\$ 428,000	214	\$2,000		
2	2	2010	TX	36872-S	Monarch Utilities I, L.P.	City of Southmayd	Water	1/26/2012	\$ 1,057,849	247	\$4,283		
3	3	2010	TX	36726-S and 36959-S	Carrizo Water Corporation & Blue Water Key Water System	Aqua Utilities, Inc. dba Aqua Texas, Inc.	Water	6/17/2011	\$ 790,000	210	\$3,762		
4	4	2010	TX	36917-S	1404 Properties LTD	Aqua Utilities, Inc. dba Aqua Texas, Inc.	Water	1/23/2012	\$ 124,000	62	\$2,000		
5	5	2011	TX	37036-S	B & J Water Company	Utility Investment Company, Inc.	Water	6/25/2012	\$ 857,000	330	\$2,597	\$ 608,149	1.41
6	6	2011	TX	36935-S	Elm Creek Water Supply Corporation	City of Troy	Water	4/27/2012	\$ 73,095	41	\$1,783		
7	7	2011	TX	37221-S	AD & JA Corp (Silver Ridge Water System)	Lass Water Company	Water	10/25/2012	\$ 5,000	26	\$192		
8	8	2011	TX	37167-S	Johnson Utilities, Inc.	Lake Livingston Water Supply and Sewer Service Corp	Water	10/15/2012	\$ 16,000	21	\$762		
9	9	2011	TX	37177-S	Texas H2O, Inc.	SIWTX, Inc. dba Canyon Lake Water Service Company	Water	6/28/2012	\$ 462,600	257	\$1,800	\$ 182,888	2.53
10	10	2012	TX	37292-S	Back Forty Water Company	Woodbine Water Supply Corp	Water	11/19/2012	\$ 250,000	102	\$2,451		
11	11	2014	TX	43048	Bluebonnet Rural Water Corporation	Corix Utilities	Water	8/14/2015	\$ 1,107,675	1,103	\$1,004	\$ 2,392,753	0.46
12	12	2015	TX	45639	Mitchell County Utility Company	Corix Utilities	Water	2/3/2017	\$ 577,500	879	\$657	\$ 410,055	1.41
13	13	2015	TX	44024	Union Hill Water Supply Corporation	Aqua Utilities, Inc. dba Aqua Texas, Inc.	Water	2/8/2016	\$ 348,000	174	\$2,000	\$ 737,637	0.47
14	14	2015	TX	45317	Romark Utility Company	Monarch Water Utilities	Water	12/5/2016	\$ 125,000	125	\$1,000		
15	15	2016	TX	46127	Westwood Utility Corporation	City of Fairfield	Water	12/18/2017	\$ 3,000,000	420	\$7,143		
16	16	2016	TX	46077	Brushy Creek Municipal Utility District	Aqua Texas, Inc.	Water	4/12/2017	\$ 50,000	207	\$242	\$ 151,087	0.33
17	17	2017	IL	N/A	City of Farmington	Illinois American Water	Water	4/1/2017	\$ 3,750,000	1,063	\$3,528	\$ 2,864,569	1.31
18	18	2017	TX	47888	Deer Creek Ranch Water Co	SIWTX, Inc. dba Canyon Lake Water Service Company	Water	11/29/2018	\$ 2,700,000	756	\$3,571	\$ 1,135,450	2.38
19	19	2018	TX	48565	Aqua Texas, Inc.	Town of Buffalo Gap, Texas	Water		\$ 397,500	269	\$1,478		
20	20	2018	TX	47922	Dal-High Water LLC	Monarch Water Utilities	Water	11/2/2018	\$ 55,200	46	\$1,200	\$ 44,862	1.23
21	21	2018	TX	48543	Chambers Meadow Estate Water Company	HILCO United Services, Inc	Water	9/9/2019	\$ 45,000	57	\$789		
22	22	2018	TX	48863	Henry Brookshire Jr	TWS Holdings	Water	9/13/2019	\$ 90,000	119	\$756	\$ 64,155	1.40
23	23	2019	TX	49230	Beverly Lee Minaldi	Simply Aquatics Inc	Water	4/19/2020	\$ 35,000	47	\$745		
24	24	2019	TX	49231	Ponder Enterprises, Inc	Lone Star Water Company	Water	5/20/2020	\$ 1,345,000	332	\$4,051	\$ 1,274,847	1.06
25	25	2019	TX	49714	Paul B Hill	Megan Estes	Water	3/13/2020	\$ 112,500	50	\$2,250	\$ 120,160	0.94
26	26	2019	TX	50085	Castle Water Inc	Horseshoe Bend Water Company	Water	6/10/2020	\$ 500,000	507	\$986	\$ 92,920	5.38
27	27	2019	TX	50122	Madera Valley WSC	Town of Pecos City	Water	4/14/2020	\$ 968,348	66	\$14,672		
28	28	2019	TX	50213	Wolfarth Place Water System	City of Wolfforth	Water		\$ 200,000	183	\$1,093		
29	29	2019	IL	N/A	Village of Lenore	Illinois American Water	Water	4/1/2020	\$ 100,000	68	\$1,471		
30	30	2019	IL	N/A	Village of Sidney	Illinois American Water	Water		\$ 2,300,000	546	\$4,212		
31	31	2019	TX	50279	Twin Creek Park Water System	Creedmoor-Maha Water Supply Corp	Water		\$ 210,000	92	\$2,283		
32	32	2019	TX	50335	City of Kaufman	College Mound Special Utility District	Water		\$ 75,000	150	\$500		
33	33	2019	PA	N/A	Lake Station	American Water	Water	10/9/2019	\$ 21,800,000	2,400	\$9,083		
34	34	2019	IN	N/A	Crystal Clear Special Utility District	American Water	Water	10/22/2019	\$ 20,700,000	3,270	\$6,330		
35	35	2020	TX	50480	David and Glenda Stegent	City of San Marcos	Water		\$ 1,144,680	489	\$2,341		
36	36	2020	TX	50616	Jarrell-Schwertner WSC	Corix Utilities	Water		\$ 100,000	75	\$1,333		
37	37	2020	TX	50712	Vinton Hills Alagre, LLC	City of Jarrell	Water		\$ 1,200,000	111	\$10,811		
38	38	2020	TX	50816		Village of Vinton	Water		\$ 453,000	83	\$5,458		

Carteret County Water System
Sales Comparison Approach
Table 3

Line No.	Transaction Number (a)	Year of Agreement (b)	State (c)	Application Number [1] (d)	Seller (e)	Purchaser (f)	Utility (g)	Date Finalized (h)	Sales Price (i)	Number of Customers (j)	Price / Customer (k)	OCLD (Book Value) (l)	Price / OCLD (m)
39	37	2020	TX	51605	LC Water Development, LP	Yancey Water Supply Corporation	Water		\$ 20,000	113	\$177		
40	40	2020	WA	N/A	Rainier View Water	California Water Service Group	Water	6/4/2020	\$ 37,600,000	18,500	\$2,032		
41	41	2021	TX	51911	The Commons Water Supply, Inc	Aqua Texas, Inc.	Water		\$ 4,000,000	992	\$4,032		
42	42	2021	IN	N/A	Town of Lowell	American Water	Water	12/28/2021	\$ 24,500,000	4,000	\$6,125		
43	43	2021	ID	N/A	Eagle Water	Suez Water	Water	12/10/2021	\$ 10,000,000	4,000	\$2,500		
44													
45													

**Carteret County Water System
Sales Comparison Approach
Table 3**

Line No.	Transaction Number (a)	Year of Agreement (b)	State (c)	Application Number (1) (d)	Seller (e)	Purchaser (f)	Utility (g)	Date Finalized (h)	Sales Price (i)	Number of Customers (j)	Price / Customer (k)	OCLD (Book Value) (l)	Price / OCLD (m)
46													
47													
48													
49													
50													
51													
52													
53													
54													
55													
56													
57													
58													
59													

Footnotes:	
[1] Effective September 1, 2014, the Public Utility Commission of Texas (PUCT) began the economic regulation of water and sewer utilities, which was formerly handled by the Texas Commission on Environmental Quality (TCEQ)	
[2] Connection count as of January 2021. Data provided by Client	
[3] OCLD from Cost Approach Table 1	

	Analysis of Price / Customer	Analysis of Price / OCLD	All Sales
High		High	5.38
Low		Low	0.33
Mean		Mean	1.56
Median		Median	1.31
Standard Dev Above Mean		Standard Dev Above Mean	2.66
Standard Dev Below Mean		Standard Dev Below Mean	0.46
Connection Count [2]		1,253 OCLD [3]	\$ 5,749,784
Indicated Value based on Median		Indicated Value based on Median	\$ 7,527,027

Oct 14 2022

NewGen Strategies & Solutions		Carteret County Water System Income Approach Income Approach General Assumptions Table 4									
Line No.	(a)	2022 (b)	2023 (c)	2024 (d)	2025 (e)	2026 (f)	2027 (g)	2028 (h)	2029 (i)	2030 (j)	2031 (k)
1	Annual Escalators										
2	General Inflation	Blue Chip Economic Indicators, Vol. 37, No. 4, December 10, 2021	5.9%	3.0%	2.3%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
3	Long Term Earnings Growth Rate		2.1%								
4	Retail Customers										
5	January 2021 Active Water Connection Count [1]	1,253									
6	Assumed Annual Customer Growth [2]	1.13%									
7	Forecasted Water Connection Count	1,267	1,281	1,296	1,311	1,325	1,340	1,356	1,371	1,386	1,402
8	General Assumptions										
9	WACC	7.80% see Exhibit 2									
10	Federal Income Tax Rate	21.00%									
11	State Income Tax Rate	2.50%									
12	Effective Income Tax Rate	22.98%									
13	State Property tax rate	0.55%									
14	Implied Depreciation Rate										
15		OC	Depr	Annual Depreciation Rate	Accumulated Depreciation	OCCLD					
16	Water Plant	\$ 3,445,395	\$ 69,827	2.0%	\$ 1,848,665	\$ 1,596,730					
17	Distribution System	\$ 8,749,648	\$ 145,286	1.7%	\$ 4,694,721	\$ 4,054,927					
18	Average Water Consumption [3]	125 Gallons per Day									
19	Total Water Consumption	57,168,125 Gallons per Year									
20	Feet in a Mile		5,280 Feet								
21	Distribution System [4]		Miles of Pipe								
22	2" PVC	26,400	5.00								
23	4" PVC	1,320	0.25								
24	6" PVC	151,588	28.71								
25	6" Ductile	4,700	0.89								
26	8" PVC	104,477	19.79								
27	8" Ductile	3,235	0.61								
28	10" PVC	3,168	0.60								
29	Service Laterals, PVC	3,759	0.71	Service Laterals assumed 3 linear feet per connection							
			56.56								

NewGen
Strategies & Solutions

**Carteret County Water System
Income Approach
Income Approach General Assumptions
Table 4**

[illegible]

**Carteret County Water System
Income Approach
Plant in Service
Table 5**

Line No.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Notes
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1 GROSS PLANT IN SERVICE											
2 Land											
3 Beginning of Year Balance	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	
4 Additions	-	-	-	-	-	-	-	-	-	-	
5 Retirements	-	-	-	-	-	-	-	-	-	-	
6 End of Year Balance	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	\$ 98,126	
7											
8 Water Plant											
9 Beginning of Year Balance	\$ 3,445,395	\$ 3,454,839	\$ 3,465,834	\$ 3,478,280	\$ 3,492,254	\$ 3,507,908	\$ 3,525,392	\$ 3,544,896	\$ 3,566,608	\$ 3,590,704	(1)
10 Additions	17,050	19,047	20,951	22,964	25,149	27,491	30,055	32,826	35,775	38,981	(2)
11 Retirements	(7,607)	(8,052)	(8,505)	(8,990)	(9,495)	(10,007)	(10,551)	(11,114)	(11,679)	(12,273)	
12 End of Year Balance	\$ 3,454,839	\$ 3,465,834	\$ 3,478,280	\$ 3,492,254	\$ 3,507,908	\$ 3,525,392	\$ 3,544,896	\$ 3,566,608	\$ 3,590,704	\$ 3,617,411	
13											
14 Distribution System											
15 Beginning of Year Balance	\$ 8,749,648	\$ 8,800,205	\$ 8,858,880	\$ 8,923,793	\$ 8,996,458	\$ 9,077,711	\$ 9,166,359	\$ 9,265,082	\$ 9,374,677	\$ 9,493,796	(1)
16 Additions	90,044	100,044	107,289	117,018	127,673	136,125	148,360	161,419	172,105	187,026	(2)
17 Retirements	(39,487)	(41,370)	(42,376)	(44,353)	(46,420)	(47,477)	(49,636)	(51,825)	(52,985)	(55,253)	
18 End of Year Balance	\$ 8,800,205	\$ 8,858,880	\$ 8,923,793	\$ 8,996,458	\$ 9,077,711	\$ 9,166,359	\$ 9,265,082	\$ 9,374,677	\$ 9,493,796	\$ 9,625,569	
19											
20 Total System											
21 Beginning of Year Balance	\$ 12,293,170	\$ 12,353,170	\$ 12,422,840	\$ 12,500,199	\$ 12,586,838	\$ 12,683,745	\$ 12,789,877	\$ 12,908,105	\$ 13,039,411	\$ 13,182,626	
22 Additions	107,094	119,091	128,240	139,982	152,822	163,616	178,415	194,245	207,879	226,007	
23 Retirements	(47,094)	(49,421)	(50,880)	(53,343)	(55,915)	(57,484)	(60,188)	(62,939)	(64,664)	(67,526)	
24 End of Year Balance	\$ 12,353,170	\$ 12,422,840	\$ 12,500,199	\$ 12,586,838	\$ 12,683,745	\$ 12,789,877	\$ 12,908,105	\$ 13,039,411	\$ 13,182,626	\$ 13,341,107	
25											
26 ACCUMULATED DEPRECIATION											
27 Land											
28 Beginning of Year Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
29 Depreciation Accrual	-	-	-	-	-	-	-	-	-	-	
30 Retirements	-	-	-	-	-	-	-	-	-	-	
31 End of Year Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
32											
Water Plant											
34 Beginning of Year Balance	\$ 1,848,665	\$ 1,910,885	\$ 1,972,852	\$ 2,034,588	\$ 2,096,092	\$ 2,157,374	\$ 2,218,461	\$ 2,279,358	\$ 2,340,087	\$ 2,400,692	(3)
35 Depreciation Accrual	69,827	70,018	70,241	70,493	70,777	71,094	71,448	71,844	72,284	72,772	
36 Retirements	(7,607)	(8,052)	(8,505)	(8,990)	(9,495)	(10,007)	(10,551)	(11,114)	(11,679)	(12,273)	
37 End of Year Balance	\$ 1,910,885	\$ 1,972,852	\$ 2,034,588	\$ 2,096,092	\$ 2,157,374	\$ 2,218,461	\$ 2,279,358	\$ 2,340,087	\$ 2,400,692	\$ 2,461,190	
38											

Carteret County Water System
Income Approach
Plant in Service
Table 5

Line No.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Notes
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
39 Distribution System											
40 Beginning of Year Balance	\$ 4,694,721	\$ 4,800,519	\$ 4,905,275	\$ 5,009,999	\$ 5,113,823	\$ 5,216,787	\$ 5,320,043	\$ 5,422,612	\$ 5,524,632	\$ 5,627,311	
41 Depreciation Accrual	145,286	146,125	147,100	148,177	149,384	150,733	152,205	153,844	155,664	157,642	(3)
42 Retirements	(39,487)	(41,370)	(42,376)	(44,353)	(46,420)	(47,477)	(49,636)	(51,825)	(52,985)	(55,253)	
43 End of Year Balance	\$ 4,800,519	\$ 4,905,275	\$ 5,009,999	\$ 5,113,823	\$ 5,216,787	\$ 5,320,043	\$ 5,422,612	\$ 5,524,632	\$ 5,627,311	\$ 5,729,700	
44											
45 Total System											
46 Beginning of Year Balance	\$ 6,543,386	\$ 6,711,405	\$ 6,878,127	\$ 7,044,587	\$ 7,209,915	\$ 7,374,161	\$ 7,538,504	\$ 7,701,970	\$ 7,864,719	\$ 8,028,002	
47 Depreciation Accrual	215,113	216,144	217,341	218,671	220,161	221,827	223,653	225,688	227,948	230,414	
48 Retirements	(47,094)	(49,421)	(50,880)	(53,343)	(55,915)	(57,484)	(60,188)	(62,939)	(64,664)	(67,526)	
49 End of Year Balance	\$ 6,711,405	\$ 6,878,127	\$ 7,044,587	\$ 7,209,915	\$ 7,374,161	\$ 7,538,504	\$ 7,701,970	\$ 7,864,719	\$ 8,028,002	\$ 8,190,890	
50											
51 NET PLANT IN SERVICE (BOY)	\$ 5,749,784	\$ 5,641,765	\$ 5,544,713	\$ 5,455,612	\$ 5,376,923	\$ 5,309,584	\$ 5,251,374	\$ 5,206,135	\$ 5,174,692	\$ 5,154,624	
52											

Footnotes:

- (1) Additions are based on the Capital expenditure analysis retirement rate calculated from the survivor curve times RCN escalated at inflation and the Capital expenditure analysis retirement rate calculated from the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost and the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost and the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost.
- (2) Retirements are based on the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost and the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost and the Capital expenditure analysis retirement rate calculated from the survivor curve times the original cost.
- (3) Depreciation accrual is based on the implied depreciation rates (see Table 4) times gross plant

Carteret County Water System
Income Approach
Revenue Requirement - Water System
Table 6

Line No.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Notes
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1 Total Utility Plant	\$ 12,293,170	\$ 12,353,170	\$ 12,422,840	\$ 12,500,199	\$ 12,586,838	\$ 12,683,745	\$ 12,789,877	\$ 12,908,105	\$ 13,039,411	\$ 13,182,626	(1)
2 Accumulated Depreciation	(6,543,386)	(6,711,405)	(6,878,127)	(7,044,587)	(7,209,915)	(7,374,161)	(7,538,504)	(7,701,970)	(7,864,719)	(8,028,002)	(1)
3 Net Utility Plant	\$ 5,749,784	\$ 5,641,765	\$ 5,544,713	\$ 5,455,612	\$ 5,376,923	\$ 5,309,584	\$ 5,251,374	\$ 5,206,135	\$ 5,174,692	\$ 5,154,624	
4 Add: Cash Working Capital	\$ 169,008	\$ 174,644	\$ 179,246	\$ 183,615	\$ 188,095	\$ 192,689	\$ 197,401	\$ 202,233	\$ 207,190	\$ 212,273	(2)
5 Add: Inventory	-	-	-	-	-	-	-	-	-	-	
6 Less: Accumulated Deferred Income Tax	(14,669)	(89,415)	(156,677)	(217,168)	(271,523)	(320,358)	(364,225)	(403,702)	(444,045)	(486,385)	(3)
7 Less: CIAC	-	-	-	-	-	-	-	-	-	-	
8 Less: Customer Deposits	-	-	-	-	-	-	-	-	-	-	
9 Rate Base	\$ 5,904,123	\$ 5,726,994	\$ 5,567,281	\$ 5,422,058	\$ 5,293,495	\$ 5,181,915	\$ 5,084,549	\$ 5,004,667	\$ 4,937,837	\$ 4,880,512	
10 After-tax Rate of Return (WACC)	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	7.8%	(4)
11 Allowed Return (after income tax)	\$ 460,522	\$ 446,706	\$ 434,248	\$ 422,921	\$ 412,893	\$ 404,189	\$ 396,595	\$ 390,364	\$ 385,151	\$ 380,680	
12 Return (before income tax)	\$ 597,886	\$ 579,949	\$ 563,775	\$ 549,069	\$ 536,050	\$ 524,751	\$ 514,891	\$ 506,802	\$ 500,034	\$ 494,229	(5)
O&M Expenses											(6)
14 Potable Water Service	\$ 163,474	\$ 170,280	\$ 176,165	\$ 181,897	\$ 187,816	\$ 193,927	\$ 200,237	\$ 206,752	\$ 213,479	\$ 220,425	
15 Treatment	30,994	32,284	33,400	34,487	35,609	36,767	37,964	39,199	40,474	41,791	
16 Distribution	480,280	494,688	506,066	516,693	527,544	538,622	549,933	561,482	573,273	585,312	
17 Taxes Other Than Income Taxes	1,284	1,323	1,353	1,381	1,410	1,440	1,470	1,501	1,533	1,565	
18 Depreciation Expense	215,113	216,144	217,341	218,671	220,161	221,827	223,653	225,688	227,948	230,414	(7)
19 Total Operating Expenses	\$ 891,144	\$ 914,719	\$ 934,325	\$ 953,129	\$ 972,539	\$ 992,583	\$ 1,013,257	\$ 1,034,622	\$ 1,056,707	\$ 1,079,507	
20 Revenue Requirement	\$ 1,489,029	\$ 1,494,668	\$ 1,498,100	\$ 1,502,199	\$ 1,508,589	\$ 1,517,334	\$ 1,528,148	\$ 1,541,423	\$ 1,556,741	\$ 1,573,736	(8)

Footnotes:

- (1) See Table 5
 (2) Based on 90 day buffer for cash expenses
 (3) See Table 7
 (4) See WACC analysis, Exhibit 2, Table H
 (5) Based on current marginal Federal Income Tax rate
 (6) Distribution expenses estimated using 2018 AWWA Benchmarks (Exhibit B) and then inflated at 2.1% per year, Treatment and Potable Water Service Cost expense are escalated using inflation and assumed customer growth.
 (7) Assessed value of Real Property multiplied by the property tax rate escalated at inflation
 (8) Return plus total operating expenses

Carteret County Water System
Income Approach
Tax Depreciation - Water System
Table 7

Line No.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Notes
(a)											(l)
1 Total Plant Tax Depreciation Basis											
2 MACRS 20-Year	3.750%	7.219%	6.677%	6.177%	5.713%	5.285%	4.888%	4.522%	4.462%	4.461%	(1)
3											
4 Capital											
5 Initial Purchase of System	\$ 7,331,829	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	(2)
6 Annual Capital Additions	107,094	119,091	128,240	139,982	152,822	163,616	178,415	194,245	207,879	226,007	(3)
7	\$ 7,438,924	\$ 119,091	\$ 128,240	\$ 139,982	\$ 152,822	\$ 163,616	\$ 178,415	\$ 194,245	\$ 207,879	\$ 226,007	
8											
9 Annual Tax Depreciation											
10 Initial Purchase & Year 1 Capital	\$ 278,960	\$ 537,016	\$ 496,697	\$ 459,502	\$ 424,986	\$ 393,147	\$ 363,615	\$ 336,388	\$ 331,925	\$ 331,850	
11 Capital Additions - Year 2		4,466	8,597	7,952	7,356	6,804	6,294	5,821	5,385	5,314	
12 Capital Additions - Year 3			4,809	9,258	8,563	7,921	7,326	6,777	6,268	5,799	
13 Capital Additions - Year 4				5,249	10,105	9,347	8,647	7,997	7,398	6,842	
14 Capital Additions - Year 5					5,731	11,032	10,204	9,440	8,731	8,077	
15 Capital Additions - Year 6						6,136	11,811	10,925	10,107	9,347	
16 Capital Additions - Year 7							6,691	12,880	11,913	11,021	
17 Capital Additions - Year 8								7,284	14,023	12,970	
18 Capital Additions - Year 9									7,795	15,007	
19 Capital Additions - Year 10										8,475	
20	\$ 278,960	\$ 541,482	\$ 510,103	\$ 481,961	\$ 456,741	\$ 434,387	\$ 414,588	\$ 397,512	\$ 403,545	\$ 414,702	
21											
22 Book Depreciation	\$ 215,113	\$ 216,144	\$ 217,341	\$ 218,671	\$ 220,161	\$ 221,827	\$ 223,653	\$ 225,688	\$ 227,948	\$ 230,414	(4)
23											
24 Difference Btwn Book and Tax Depreciation	\$ 63,847	\$ 325,338	\$ 292,762	\$ 263,290	\$ 236,580	\$ 212,560	\$ 190,934	\$ 171,824	\$ 175,597	\$ 184,288	
25											
26 Deferred Income Tax (State and Federal)											
27 Annual	\$ 14,669	\$ 74,746	\$ 67,262	\$ 60,491	\$ 54,354	\$ 48,836	\$ 43,867	\$ 39,477	\$ 40,343	\$ 42,340	
28 Accumulated (for Rate Base development)	14,669	89,415	156,677	217,168	271,523	320,358	364,225	403,702	444,045	486,385	
Footnotes:											
(1) Modified Accelerated Cost Recovery System (MACRS), IRS Publication 946 (2018), Table A-1 (Half-Year Convention); Water plant is Asset Class 49.3 uses 20-year MACRS											
(2) Income Value (Table 8)											
(3) Capital Additions as shown on Table 5											
(4) Depreciation as shown on Table 5											

Carteret County Water System
Income Approach
Discounted Cash Flow Analysis - Water System
Table 8

Line No.		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Notes
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	Rate Revenue	\$ 1,489,029	\$ 1,494,668	\$ 1,498,100	\$ 1,502,199	\$ 1,508,589	\$ 1,517,334	\$ 1,528,148	\$ 1,541,423	\$ 1,556,741	\$ 1,573,736	(1)
2	Other Revenue	\$ 26,400	\$ 26,928	\$ 27,467	\$ 28,016	\$ 28,576	\$ 29,148	\$ 29,731	\$ 30,325	\$ 30,932	\$ 31,550	
3	Total Revenue	\$ 1,515,429	\$ 1,521,596	\$ 1,525,567	\$ 1,530,214	\$ 1,537,166	\$ 1,546,482	\$ 1,557,879	\$ 1,571,749	\$ 1,587,673	\$ 1,605,286	
4	O&M Expenses											
5	Potable Water Service	\$ 163,474	\$ 170,280	\$ 176,165	\$ 181,897	\$ 187,816	\$ 193,927	\$ 200,237	\$ 206,752	\$ 213,479	\$ 220,425	
6	Treatment	30,994	32,284	33,400	34,487	35,609	36,767	37,964	39,199	40,474	41,791	
7	Distribution	480,280	494,688	506,066	516,693	527,544	538,622	549,933	561,482	573,273	585,312	
8	Taxes Other Than Income Taxes	1,284	1,323	1,353	1,381	1,410	1,440	1,470	1,501	1,533	1,565	(1)
9	Depreciation Expense (Book)	215,113	216,144	217,341	218,671	220,161	221,827	223,653	225,688	227,948	230,414	(1)
10	Total Operating Expenses	\$ 891,144	\$ 914,719	\$ 934,325	\$ 953,129	\$ 972,539	\$ 992,583	\$ 1,013,257	\$ 1,034,622	\$ 1,056,707	\$ 1,079,507	
Income Tax Calculation												
11	Operating Income	\$ 624,286	\$ 606,877	\$ 591,242	\$ 577,085	\$ 564,626	\$ 553,899	\$ 544,622	\$ 537,127	\$ 530,966	\$ 525,779	
12	Add Back: Book Depreciation	215,113	216,144	217,341	218,671	220,161	221,827	223,653	225,688	227,948	230,414	
13	Less: Tax Depreciation	(278,960)	(541,482)	(510,103)	(481,961)	(456,741)	(434,387)	(414,588)	(397,512)	(403,545)	(414,702)	(2)
14	Operating Income for Tax Purposes	\$ 560,439	\$ 281,539	\$ 298,480	\$ 313,795	\$ 328,046	\$ 341,339	\$ 353,688	\$ 365,303	\$ 355,369	\$ 341,491	
15												
16	Combined Income Tax Rate	22.98%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	
17												
18	Income Taxes	\$ 128,761	\$ 64,683	\$ 68,576	\$ 72,094	\$ 75,369	\$ 78,423	\$ 81,260	\$ 83,928	\$ 81,646	\$ 78,458	
19												
20	Operating Income	\$ 597,886	\$ 579,949	\$ 563,775	\$ 549,069	\$ 536,050	\$ 524,751	\$ 514,891	\$ 506,802	\$ 500,034	\$ 494,229	
21	Less: Income Taxes	(128,761)	(64,683)	(68,576)	(72,094)	(75,369)	(78,423)	(81,260)	(83,928)	(81,646)	(78,458)	
22	Net Income	\$ 469,125	\$ 515,265	\$ 495,200	\$ 476,975	\$ 460,681	\$ 446,328	\$ 433,631	\$ 422,873	\$ 418,388	\$ 415,771	
23	Add Back: Book Depreciation	215,113	216,144	217,341	218,671	220,161	221,827	223,653	225,688	227,948	230,414	
24	Earnings Before Interest, Depreciation & Amort.	\$ 684,238	\$ 731,409	\$ 712,540	\$ 695,646	\$ 680,842	\$ 668,155	\$ 657,285	\$ 648,561	\$ 646,336	\$ 646,185	
25	Less: Capital Expenditures	\$ (107,094)	\$ (119,091)	\$ (128,240)	\$ (139,982)	\$ (152,822)	\$ (163,616)	\$ (178,415)	\$ (194,245)	\$ (207,879)	\$ (226,007)	(3)
26	Less: Changes in Working Capital	-	(5,636)	(4,602)	(4,369)	(4,480)	(4,594)	(4,712)	(4,832)	(4,956)	(5,083)	(4)
27	Free Cash Flow	\$ 577,143	\$ 606,682	\$ 579,698	\$ 551,295	\$ 523,540	\$ 499,945	\$ 474,158	\$ 449,484	\$ 433,500	\$ 415,095	
Capitalized Cash Flow Analysis												
28	Weighted Average Cost of Capital (WACC)	7.80%	(5)									
29	Long Term Earnings Growth Rate	2.10%	(6)									
30	Capitalization Rate	5.70%	(7)									
31												
32	Net Present Value of 2021-2030 Free Cash Flow	\$ 3,549,756	(8)									
33	Terminal Value	\$ 7,435,305	(9)									
34	Net Present Value of Terminal Value	3,782,073	(10)									
35	Income Value	\$ 7,331,829	(11)									

Carteret County Water System
Income Approach
Discounted Cash Flow Analysis - Water System
Table 8

Line No.	(a)	2022 (b)	2023 (c)	2024 (d)	2025 (e)	2026 (f)	2027 (g)	2028 (h)	2029 (i)	2030 (j)	2031 (k)	Notes (l)
	Footnotes: (1) See Table 6 (2) See Table 7 (3) See Table 5 (4) Based on 90 day buffer for cash expenses (5) See WACC analysis, Exhibit 2, Table H (6) Blue Chip Economic Indicators, Vol. 37, No. 4, December 10, 2021 (7) WACC minus Earnings Growth Rate (8) Free Cash Flows discounted at the WACC (9) Estimated Free Cash flow in 2031 divided by Capitalization Rate (10) Terminal Value discounted at the WACC from 2031 to 2022 (11) Sum of the NPV of 2021-2030 Free Cash Flows Plus the NPV of the Terminal Value											



EXHIBIT 2: COST OF CAPITAL (DISCOUNT RATE)

REPORT

**FAIR VALUE APPRAISAL OF THE
WATER SYSTEM IN CARTERET COUNTY**



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE A: UNLEVERING WATER UTILITY PROXY GROUP BETAS

Row No	Column A Company	Column B Ticker Symbol	Column C % Debt in Capital Structure [1]	Column D Tax Rate [2]	Column E % Equity in Capital Structure	Column F Levered Beta [3]	Column G Unlevered Beta [4]
1	American States Water	AWR	48.5%	24.0%	51.5%	0.65	0.38
2	American Waterworks	AWK	61.5%	23.5%	38.5%	0.90	0.41
3	Artesian Resources Corp	ARTNA	45.0%	21.0%	55.0%	0.75	0.46
4	California Water Services Group	CWT	45.5%	21.0%	54.5%	0.70	0.42
5	Essential Utilities	WTRG	56.0%	6.0%	44.0%	1.00	0.46
6	Middlesex Water	MSEX	41.5%	21.0%	58.5%	0.70	0.45
7	SIW Group	SIW	51.0%	21.5%	49.0%	0.80	0.44
8	York Water Company	YORW	42.5%	21.0%	57.5%	0.85	0.54
9	Average		48.9%	19.9%	51.1%	0.79	0.44

Footnotes:

- [1] Capital structure as forecast by Value Line Investment Survey reports prior to date of valuation.
 [2] Income tax rates as forecast by Value Line Investment Survey reports prior to date of valuation. Assumed 21% rate if forecast
 [3] Most recent Value Line Investment Survey reports prior to date of valuation.
 [4] See *Valuing a Business*, Fourth Edition, by Pratt, Reilly and Schweins, page 169. Published betas for publicly traded stocks reflect the actual financial leverage of the company's capital structure. An unlevered beta is the beta the company would have if it had no debt.
 Unlevering the betas removes the effect of each company's financial leverage on the guideline betas.

$$B_U = B_L / (1 + (1 - t)(W_D/W_E))$$

where B_U = Beta unlevered

B_L = Beta levered

t = tax rate for company

W_D = Percent debt in the capital structure

W_E = Percent equity in the capital structure



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE B: RELEVING GUIDELINE COMPANY BETA

Row No.	Column A Debt [1]	Column B Tax Rate	Column C Equity	Column D Unlevered Beta	Column E Beta Levered [2]
1	48.9%	19.9%	51.1%	0.44	0.78

Footnotes:

[1] Average debt, tax rate and beta for water utility proxy group shown in Table A
 [2] Levered beta calculated based on formula provided in *Valuing a Business*, Fourth Edition, by Pratt, Reilly and Schweih, page 169.

$$B_L = B_U [1 + (1 - t)(W_d / W_e)]$$

where B_U = Beta unlevered

B_L = Beta levered

t = tax rate for company

W_d = Percent debt in the capital structure

W_e = Percent equity in the capital structure



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE C: CAPITAL ASSET PRICING MODEL (USING CRSP SIZE PREMIA) [1]

Row	Column	Column	Column	Column	Column	Notes
No.	A	B	C	D	E	F
1	Methodology Step One:			Risk Free Investment Rate	Amount 1.94%	Risk Free Rate (RFR) was selected, representing the 20-Year Treasury Constant Maturity Rate available on 12/31/2021 at the Federal Reserve Bank.
2	Step Two:	Plus	Equity Risk Premium [2]		6.2%	
3		Times	Beta		0.78	Table B: Levered Beta
4					4.8%	Valuation Date Average Market Return
5	Step Three:	Plus	Size Premium [3]		5.26%	CRSP Size Premium (Return in Excess of CAPM), Decile 10
6	Step Four:	Equals			12.0%	Cost of Equity

Footnotes:

- [1] Source: Business Valuation Resources Cost of Capital Professional
- [2] The Historical ERP calculated using the S&P 500 average annual return of 11.98% derived from CRSP data for the 1928 - 2021 period and a 5.78% 20-year T-Bond average annual return (Reconstructed) for the same timeframe.
- [3] The Size Premium was based on CRSP decile 10 which included 622 firms with an equity market capitalization size ranging from \$10,588,000 to \$289,007,000 in Q4 2021. The mean annual return for the S&P 500 for the same period was 11.98%. The difference between the CRSP mean decile return and the S&P 500 mean return was adjusted by the beta of CRSP decile 10 of 1.39.



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE D: WEIGHTED AVERAGE COST OF CAPITAL (USING CRSP SIZE PREMIA)

Row No.	Column A	Column B	Column C	Column D	Column E
		Description			Amount
1		Percent Debt in Capital Structure [1]			48.9%
2		Cost of Debt [2]			4.29%
3		Effective Tax Rate [3]			23.0%
4		Percent Equity in Capital Structure			51.1%
5		Cost of Equity [4]			12.0%
6		Weighted Average Cost of Capital [5]			7.8%

7	[1]	Average capital structure based on utility proxy group. See Table A			
8	[2]	Corporate Bond Rates, Baa (%) - 2022 Forecast Annual Average - Blue Chip Economic Indicators - Volume 38, No. 1			
9	[3]	Effective Federal and State tax at 21% federal income tax rate and 2.5% state income tax			
10	[4]	Average of cost of equity using the Capital Asset Pricing Model in Table C			
11	[5]	WACC = $W_d(k_d)(1-t)+W_e(k_e)$			
12		where			
13		W_d = Percent debt in the capital structure			
14		k_d = Cost of debt			
15		t = tax rate			
16		W_e = Percent equity in the capital structure			
17		k_e = Cost of equity			

Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE E: CRSP Capital Asset Pricing Model Assumptions

The 01/01/2022 cost of capital analysis for Carteret County was completed on 05/12/2022 using the Q4 2021 Cost of Capital Professional study. Returns were selected and calculated for the time period ranging from 1928 to 2021 using an arithmetic mean.	
The Capital Asset Pricing Model was selected based on professional judgment for the calculation of the cost of equity capital. The various components selected are as follow:	
CoE = RFR + (Beta*ERP) + SP	
12.04% = 1.94% + [0.78 * 6.21%] + 5.26%	
A <u>1.94%</u> Risk Free Rate (RFR) was selected, representing the 20-Year Treasury Constant Maturity Rate available on 1/01/2021 at the Federal Reserve Bank.	
A beta of <u>0.78</u> was selected based on professional judgment.	
A <u>6.21%</u> Equity Risk Premium (ERP) was selected, representing the Historical ERP calculated using the S&P 500 average annual return of 11.98% derived from CRSP data for the 1928 - 2021 period and a 5.78% 20-year T-Bond average annual return (Reconstructed) for the same timeframe.	
A <u>5.26%</u> Size Premium (SP) was selected. The Size Premium was based on CRSP decile 10 which included 622 firms with an equity market capitalization size ranging from \$10,588,000 to \$289,007,000 in Q4 2021. The mean annual return for the S&P 500 for the same period was 11.98%. The difference between the CRSP mean decile return and the S&P 500 mean return was adjusted by the beta of CRSP decile 10 of 1.39.	
Cost of Capital Professional returned a <u>12.04%</u> cost of equity capital for Carteret County as of 01/01/2022 based on the Capital Asset Pricing Model.	
In addition, the Weighted Average Cost of Capital (WACC) was also computed for Carteret County. Given the components selected the formula used is as follows:	
WACC = (CoE * We) + (KdPreTax * (1 - t) * Wd)	
7.59% = (12.04% * 51.10%) + (4.29% * (1 - 22.98%) * 48.90%)	
An equity percentage of <u>51.10%</u> was selected.	
A debt percentage of <u>48.90%</u> was selected.	
A borrowing rate (pre-tax cost of debt) of <u>4.29%</u> was selected.	
A tax rate of <u>22.98%</u> was selected.	
Cost of Capital Professional returned a <u>7.8%</u> WACC for Carteret County as of 01/01/2022.	
Disclaimer: Items included in the analysis based on professional judgment were not provided by Cost of Capital Professional. Additionally, the cost of equity model (Build-Up or CAPM) is chosen by the professional based on professional judgment using skill, knowledge, experience, education, and training.	

Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE F: CAPITAL ASSET PRICING MODEL (USING KROLL RISK PREMIA)

Row No.	Column A	Column B	Column C	Column D	Column E	Column F
1	Step One:	Methodology		Amount		Notes
			Risk Free Investment Rate [1]		2.5%	Kroll Normalized Risk Free Rate
2	Step Two:	Plus	Equity Risk Premium [1]		5.5%	Kroll Recommended U.S. Equity Risk Premium
3		Times	Beta		0.78	Table B: Levered Beta
4					4.3%	Valuation Date Average Market Return
5	Step Three:	Plus	Size Premium [1]		5.2%	Kroll Size Premium (Portfolio 25)
6	Step Four:	Equals			12.0%	Cost of Equity

Footnotes:

[1] Source: Kroll Cost of Capital Navigator



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE G: WEIGHTED AVERAGE COST OF CAPITAL (USING KROLL RISK PREMIA)

Row	Column A	Column B	Column C	Column D
	Description			Amount
1	Percent Debt in Capital Structure [1]			48.9%
2	Cost of Debt [2]			4.29%
3	Tax Rate [3]			23.0%
4	Percent Equity in Capital Structure			51.1%
5	Cost of Equity [4]			12.0%
6	Weighted Average Cost of Capital [5]			7.7%

Footnotes:

- [1] Average capital structure based on utility proxy group. See Table A
- [2] Corporate Bond Rates, Baa (%) - 2022 Forecast Annual Average - Blue Chip Economic Indicators - Volume 38, No. 1
- [3] Effective Federal and State tax at 21% federal income tax rate and 2.5% state income tax
- [4] Average of cost of equity using the Capital Asset Pricing Model in Table F
- [5] $WACC = W_d(k_d)(1-t) + W_e(k_e)$
- where
- W_d = Percent debt in the capital structure
- k_d = Cost of debt
- t = tax rate
- W_e = Percent equity in the capital structure
- k_e = Cost of equity



Carteret County Water System
Water System Valuation
Estimation of Weighted Average Cost of Capital as of January 1, 2022

TABLE H: WEIGHTED AVERAGE COST OF CAPITAL

Row No.	Column			Amount
	A	B	C	
	Description			
1	CRSP Risk Premia WACC			7.8%
2	Kroll Risk Premia WACC			7.7%
3	Average Weighted Cost of Capital [1]			7.8%

Footnotes:

[1] Average WACC = (CRSP WACC + D&P WACC) / 2