Manatee County
Transfer Procedure for Non-County Owned Utility Systems

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1 EXECUTIVE SUMMARY

Manatee County (County) owns and operates water distribution and wastewater collection systems. On a retail customer basis, the County supplies water to and receives wastewater from some subdivisions that own their water distribution and wastewater collection systems. In some of these cases, the County owns the water meters, while the subdivisions own the pipelines, lift stations, and appurtenances (such as manholes, hydrants, valves, etc.). Similar to other retail customers, Manatee County reads and maintains the meters, and provides monthly billing and revenue collection. The County retained Carollo Engineers (Carollo) to develop a procedure that the County can use to estimate the costs to integrate a non-County owned system into their public utility. One of the overriding principles guiding this work was the belief that the County owes to its ratepayers the obligation to protect them from the expense of subsidizing the absorption of private systems in need of significant investment to repair and bring up to current standards.

The County periodically receives requests from developments or subdivisions, referred to interchangeably as non-County owned or private systems, for the County to take over ownership and maintenance responsibility for the infrastructure. The County would like to develop a procedure based on best-practices to evaluate the non-County owned systems and determine an equitable fee for the incorporation of these assets. This fee is the responsibility of the system owner and is intended to cover the County's costs to incorporate, operate, maintain, and eventually replace the system assets in lieu of constructing a new system that meets current standards.

There are over 400 private systems within the County, and they range from small, densely packed mobile home parks to large and exclusive planned developments. There are many differences between private systems based on their age, the materials in use at the time, engineering design choices, construction methods and the extent to which the system has been maintained and repaired over time. County standards are designed to ensure robust, reliable, and enduring infrastructure systems to serve the community. These standards continuously evolve as new, improved products are developed, as challenges teach the industry what approaches work best, and as new and improved products become available. Not every system was constructed to the County standards in place at the time of construction and since deviations vary widely in consequence and cost, it is a challenge to develop a process fair to all concerned. Also, some private systems may have invested significantly to refurbish and repair their systems or have invested in preventative maintenance whereas others may have only performed compulsory repairs to directly address points of failure. So, the process to develop a transfer fee needs to have sufficient flexibility so that it can capture all the variables and considerations.

The utility benchmarking task of this project revealed the uniqueness of this type of transaction, as none of the comparable utilities surveyed had this specific situation. Despite this, the general consensus is that an industry standard asset valuation approach is most useful. The overall transfer fee of physical assets is a total of four components:

- **Component 1**: Evaluation Study.
- **Component 2**: Expense to clean and inspect the system.
- **Component 3**: Charge to recoup costs for the system's depreciated assets.
- **Component 4**: Credit given to the private system owner for past fees collected through customer rates associated with the operation and maintenance (O&M) of the system.
- **Component 5**: Charge for system deficiencies (or to correct them).

The procedure developed in this analysis was demonstrated on examples of non-County owned systems of varying characteristic sizes and ages to demonstrate how the methodology might work in those cases. Each non-County owned systems' data is unique, but the value in demonstrating the methodology described in this report is that it will be illustrative, lend understanding to the process for those who may be interested in a private system transfer to the County, and help to manage expectations for the process. This report details tasks to build the methodology in its own section along with the results, and the overall recommended procedure to determine the transfer fee for a non-County owned system that the County may encounter in the future.

2 PROJECT SCOPE AND BACKGROUND

The State of Florida has local, special-purpose government entities authorized by Chapter 190 of the Florida Statutes and County Ordinances as an alternative method of planning, acquiring, operating, and maintaining community-wide improvements in planned communities. Sometimes referred to as Community Development Districts (CDDs), these communities provide infrastructure generated by growth, ultimately without overburdening other governments and their residents.

The County has received requests from some CDDs and from other non-County systems for the County to assume ownership and maintain these systems. Some non-County owned systems do not meet the County's current utility standards or have been poorly maintained, requiring significant investment in the infrastructure in order to be brought up to current standards. To offset this investment, the County desired to develop a procedure based on best practices to evaluate these systems and determine an equitable transaction fee. The intent is that rather than the private system being required to bring their system up to current standards, the asset lifecycle charge accounts for the consideration that eventually the assets will need to be replaced, and when doing so they would be brought up to current standards. The exception is if there are assets that present safety concerns or impede working order of the system. For these items, the County will assess a deficiency charge which represents the cost of the items that would need to be addressed prior to transferring ownership to the County (these may or may not be related to utility standards). Additional information regarding the deficiency charge is provided in Section 5.5.

The following tasks were performed to develop a procedure to estimate the cost of integrating a non-County owned system into the County's utility:

- **Task 1**: Benchmarked comparable utilities to determine industry best-practices for estimating valuations related to assuming ownership of a system.
- **Task 2**: Created a procedure that establishes a value or replacement cost of system assets, considering factors such as system age, compliance with current standards, O&M impacts, and remaining asset value.
- **Task 3**: Demonstrated the procedure using example datasets for a range of private system ages, sizes, and complexity to benchmark and establish expectations for those who may have an interest in the process.

The above procedure acts as a tool for the County. This report includes sample calculations for non-County owned systems of varying characteristics. Refer to the Procedures Manual in Appendix A for more details and forms used to facilitate the transfer.

Finally, Manatee County's coastal lands comprise an important part of its rich heritage, economic vitality, and environmental resources. However, sadly, as we have borne witness to numerous times over the past few decades, coastal lands are also uniquely vulnerable to tropical storm events that can wreak significant

damage. It should be noted that the County will not consider taking over non-County owned systems defined by the Coastal High Hazard Area mapping as included within the most recent edition of the Manatee County Comprehensive Plan.

3 UTILITY BEST-PRACTICES BENCHMARKING

The first task, benchmarking, compared business processes and performance metrics to industry best-practices. It is a valuable tool to determine if there are any areas or processes that can be improved upon by understanding how other organizations operate. Best-practices benchmarking can be broken down into the four following primary phases:

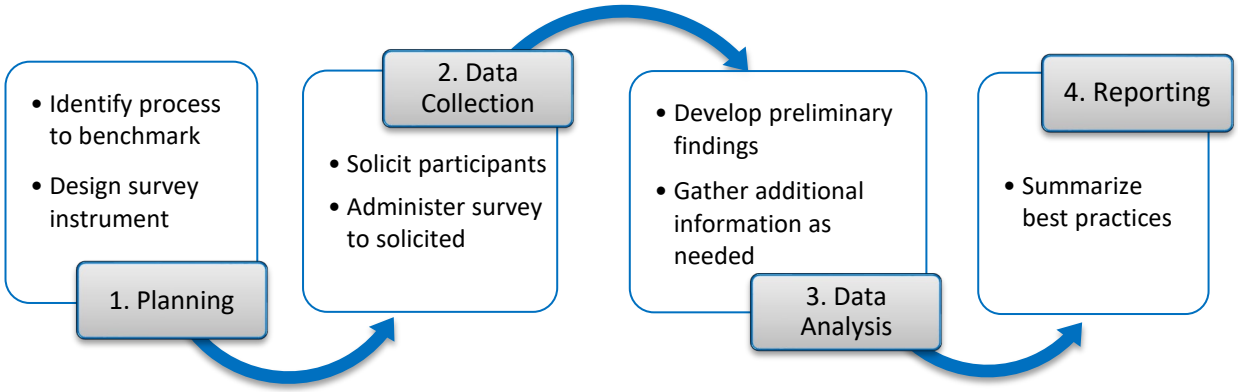


Figure 1 Four Phases of Best-Practices Benchmarking

With the process for this particular scenario of water and wastewater utility integration defined, the planning and data collection phases focus on the qualitative or quantitative data to be gathered. The first step was to recruit water and wastewater utilities to participate in the best-practices benchmarking. The agencies involved had experience with valuating water or wastewater utility system integration during the transfer of ownership from takeovers, acquisitions, or annexations. Each of which included the fundamental question of the integration's feasibility. The survey was designed to be consistent, concise, and well-defined while remaining flexible enough to adapt to each utility's experience.

3.1 Benchmarking Limitations

The purpose of benchmarking was to determine any best-practices related to the integration of a non-County owned system in order to create a procedure that allows for all non-County owned systems to be evaluated similarly. The main condition of a County takeover (for the purposes of this report) is that the recipient, the County, will receive a transfer of physical assets fee from the non-County owned system when necessary.

The County's unique situation posed a challenge during the surveys as no participating utility had this exact type of transaction or situation. However, the surveys revealed a consensus that, regardless of which entity receives the transaction fee, the costs can be partially or entirely determined based on standard utility valuation methods. The information gathered and the subsequent recommendations made in this report reflect the best available knowledge at the time of the benchmarking.

3.2 Utility Survey

The utility survey was well-defined while remaining flexible enough to adapt to each utility. Although each utility had system acquisition experience, none had been responsible for calculating the transaction payment. Administering the survey was a two-step process of an email questionnaire in preparation for a follow-up phone interview. The discussion focused on a few main areas with more targeted questions based on the utility's response. The main areas of the survey were as follows:

- What are your main costs associated with asset acquisition[1]?
- How extensive is your condition assessment of the non-Utility owned system?
- How do you reflect that a system is not up to standards in the negotiated transaction cost?
- How do you calculate O&M costs post-acquisition?

3.3 Survey Responses and Findings

The benchmarking effort engaged nearly 10 utilities across Florida, and other states, which represent a diverse group in terms of system size and age of assets. Input from the participating utilities on practices that they found useful centered on two feasibility options:

1) Accept the non-utility owned system and payment, along with O&M responsibility, or
2) Do not take on the non-utility owned system and maintain the status quo.

For either option, the following survey observations were common among the interviewed utilities:

- **Observation 1**: Although system takeovers are common, the type where a non-utility owned system pays a physical asset transfer fee is unique. There were no instances where ownership of the infrastructure remains shared as in the case of the County owning the water meters and the non-County entity owning the distribution and collection system pipelines.
- **Observation 2**: Typical system valuation approaches may be used as a basis but require careful adjustments to estimate a transaction payment that will be received rather than issued.
- **Observation 3**: Many utility acquisitions included package plants in addition to distribution and collection systems. That is not the case for Manatee County.
- **Observation 4**: Responses were relatively similar regardless of the location or size of the utility.

[1] The terms "acquisition", "takeover", and "annexation" are used interchangeably throughout this report for benchmarking and surveying purposes. However, the County has elected to use "transfer of physical assets fee" for their unique circumstance to assume ownership of a non-County system.

4 PROCEDURE TO ASSIGN VALUE

4.1 System Valuation Approaches

The second task was the procedure to assign monetary value through a valuation method. As the benchmarking supports, regardless of the recipient of an acquisition payment, the transaction costs can be partially or entirely determined based on standard utility valuation methods. An infrastructure valuation is fundamental to estimating investment costs of system improvements, upgrades, and replacements.

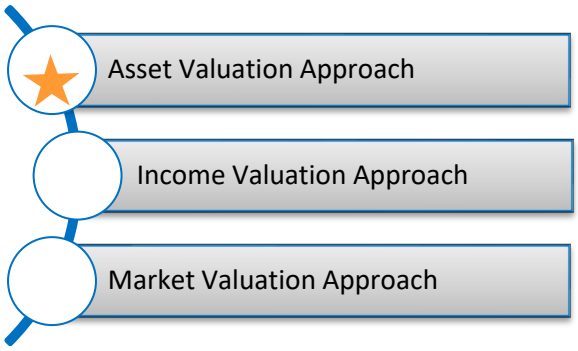


Figure 2 Typical Industry Valuation Approaches

Figure 2 lists three underpinning valuation approaches generally accepted by the water utility industry and recommended by the American Water Works Association (AWWA).

4.1.1 Asset Valuation Approach

This approach uses an asset inventory to calculate the replacement cost new less depreciation (RCNLD) of each system asset to determine the theoretical cost to replace the system with a new one, minus the value lost to depreciation. Replacement cost is inclusive of design, overhead, and contingencies costs and associated collection and/or distribution system components such as hydrants, manholes, and lateral replacements. The depreciation cost is based on the remaining useful life of system components using asset age or condition.

4.1.2 Income Valuation Approach

This approach estimates the value of the potential cash flows in the form of pre-tax earnings of the physical assets of the system, rather than the costs of construction or of replacing the system. This approach is not applicable because the non-County owned systems are already County customers; however, the County does not own or maintain the pipelines. No new revenue stream is generated by taking on ownership and maintenance responsibilities of a system.

4.1.3 Market Valuation Approach

This approach, also known as Comparable Sales, provides both the potential recipient and contributor with a basis for assessing the value of the system in the current market. Results from a search of Florida PSC public records regarding the sale or transfer of ownership of private investor-owned water utilities would be evaluated and compared. However, because the County's situation is rare, no records were found of similar transactions, and it is highly unlikely that there would be records of similar transactions to compare against. This lack of a market makes this approach not applicable.

4.2 Recommended Valuation Approach

Of the three general approaches described above, the Asset Valuation Approach is the only applicable approach for the County's situation. This approach determines the replacement cost for each asset, should it need to be replaced, but does not consider the ongoing O&M liabilities associated with that asset or costs to bring the system up to current County standards. Therefore, the County's transfer fee calculation will also need to incorporate the costs related to operations, maintenance, and County standards. The characteristics

that the County should consider when evaluating a system include physical assets such as pipelines (including water service and sewer laterals) and appurtenances i.e., hydrants, manholes, valves, lift stations, and any other facilities used to distribute water or collect wastewater. This inventory will form the basis to calculate the replacement cost new (RCN) of the non-County owned system.

Available historical data is necessary to evaluate costs to associate with system depreciation and deficiencies that will require correction and result in additional costs to bring the system up to current County standards. Deficiencies can be based on observations from site visits by County staff and include, but are not limited to:

- Historical records related to leaks, spills, and breaks.
- Documented facilities that retard or prevent access for pipeline, valve, meter, or cleanout placement will be considered (such as valves under sidewalks or driveways or pipes under asphalt).
- Landscaping planted too close to infrastructure for adequate access and/or within the right-of-way such that root damage will significantly reduce the life of the infrastructure and/or impair the County's ability to service and repair the same are considered incipient defects and accounted for accordingly. These concerns will be assessed as mitigating factors during the inspection process.
- System as-builts to determine compliance or non-compliance with current standards such as the size of pipes, pressure requirements, and lift station construction and security requirements.
- Any significant systemwide refurbishment projects (such as cure-in-place lining systems, manhole lining projects, or pump replacements) that may have significantly extended the life of an asset and would accordingly reduce the calculated depreciation expense.

4.2.1 Valuation Calculation Methodology

The basis of the approach relies on calculating an RCN for the entire system. This is done using the system characteristics described in the previous section and then determining any fees based on the system conditions.

4.2.2 Replacement Cost Calculation

The RCN is a high-level estimate of the cost to replace the assets today. The calculation is based on unit costs for the types of system assets. The RCN also serves as the basis for the fees or charges assessed later in this analysis.

Table 1 lists unit cost estimates for pipelines. These unit costs are per linear feet (LF) and include fittings and valves, contingency, and costs of engineering and services during construction. Table 2 presents current costs of other facilities and appurtenances.

These unit costs represent typical average costs to replace assets with their new version, in 2023 dollars. Individual asset costs may vary depending on factors such as accessibility or obsolescence, for example. The valuation model created to align with the procedure allows for the costs of individual assets to be adjusted, as necessary, to reflect the replacement cost. The RCN of the overall system is the product of the amount and type of asset and their respective unit costs.

Table 1 Unit Cost for Pipelines (Constructed)

Pipe Diameter	Cost per LF
2 in.	$127
4 in.	$153
6 in.	$184
8 in.	$248
10 in.	$336
12 in.	$427
14 in.	$545
16 in.	$606
18 in.	$668
20 in.	$802

Table 2 Service, Lateral, Appurtenance, and Facility Component Unit Cost

Asset Type	Cost per Unit
Water Service	$1,000
Reclaimed Water Service	$1,000
Hydrant	$5,000
Lateral Pipeline Installation	$6,119
Manhole	$17,656
Lift Station Pump	$26,963
Lift Station Electrical, Instrumentation, and Controls (EI&C)	$126,500
Lift Station Wet Well	$185,277

5 TRANSFER COSTS AND TRANSFER FEE CALCULATION

The transfer cost for a non-County owned system is a combination of five components. Some of these cost elements reflect payment/credit to the County, some reflect credit to the private system, and others reflect a charge the private system will need to pay to their own selected contractor. These various cost elements are described below:

1) **Evaluation Study** *(paid by the private system to the County to commence the process)*: This is a charge to recoup a portion of the typical expense to the County from engaging an engineering consultant to analyze a private system's data. This is necessary to develop an estimate for cleaning and inspection, applicable O&M credits, and life cycle depreciation charge. This data is based on the system's specific assets and age so that the customers understand where they stand before they commit to investing the funds to have a private contractor clean and inspect their system. *Note*: Although there is a nominal cost for this study, the private system is free to walk away afterwards with no further obligation at their discretion.
2) **Inspection and Cleaning Expense** *(paid by the private system to their own contractor)*: Costs to perform an inspection and initial cleaning of the system performed to the County's standards (see Appendix A). The purpose of this effort is to identify any significant defects (such as a broken pipe, or any that require repair). While the County will accept video inspections up to five years old, any street reflecting ponding or manholes where there may be evidence of recent subsidence or other telltale signs of collection system deficiencies may require a current (within the past six months) inspection report.

   Although this element will include some level of oversight by County staff in visually inspecting or confirming proper function of certain water system assets, wastewater lift stations, and air release valves, the County will not attempt to recoup any of its own labor costs for such effort. The majority of the cost associated with this element is related to gravity wastewater collection system cleaning and CCTV inspection. The County does not offer this service but, in an attempt to assist the private system, we apply typical industry costs for this type of work in the Evaluation Report to estimate what the private system may need to expend for such work so they can budget accordingly.
3) **Asset Lifecycle – Depreciation Charge** *(credit to the County if the private system elects to proceed with transfer)*: Charges to recoup the deterioration expense associated with aged assets. This is based on an assumed average asset lifecycle and depreciation using condition curves (non-linear). Consideration is factored in for any significant refurbishment, replacement, or rehabilitation investment into the system. The depreciation curves utilized are more favorable to the private system than simple straight-line depreciation; they reflect the understanding that infrastructure tends to retain significant value well into its useful life with deterioration accelerating towards the end of the period.
4) **O&M Credit** *(credit to the private system if the private system elects to proceed with transfer)***:** Costs that were collected through customer rates for daily operations and maintenance of the system. Due to its retrospective nature, the O&M calculation results in a credit as a reduction to the total fee. O&M costs are based on the number of average active customer accounts per utility service provided (potable water, wastewater collection, wastewater lift station) in the current and prior years (see Section 5.3.1). The manner in which this credit is derived is highly favorable to the private system. Additional discussion on this topic is included later in the document.

5) **Deficiency Evaluation and Charge**: Costs associated with bringing the system into working order that the County is willing to accept, based on the County's review of the system as-builts, inspection reports, and related assessments/inspection. Some deficiencies that may impair proper and/or safe operation of the system could be considered significant enough that they must be corrected by the private system owner before transfer. Whereas other deficiencies may not significantly impair operations at this time but are indicative of latent/developing concerns that will continue to deteriorate and are likely to require investment of County ratepayer funds to address in the near term and so will be assigned a cost.

The following sections describe each component and its calculation criteria. The costs presented are for this analysis' purpose; current costs will be used for each individual system evaluation. It is important to note that this methodology and the accompanying examples are designed to manage a variety of possible scenarios. As such, the example systems in this report include all system assets, even if some of these assets may not be eligible for transfer.

For example, a system may have reclaimed water functionality, but the asset may not be eligible for transfer to the County. In these instances, the fee to transfer the reclaimed water assets is calculated and shown in the total transfer fee; however, the County will remove the portion of the fee related to assets not included in the transfer.

5.1 Evaluation Study

Once a private system has expressed interest in turning over their system to the County, the County will engage an engineering consultant to perform an assessment of the private system, referred to here as the "Evaluation Study". As a part of this work, the consultant will delineate the limits of the system and quantify infrastructure elements. They will identify the type of pipe used and its various lengths, diameters, materials, and ages. They will identify major system elements such as lift stations and system appurtenances such as hydrants, manholes, etc. They will track the history of the development to understand how many applicable homes were in place each year going back to the start of the development for the purpose of calculating the O&M credit. While the County charges a nominal fee for the Evaluation Study based on system size and complexity, the amount is generally only 30 to 50 percent of the actual direct cost. The sentiment being that this effort is of value to both the County and the private system, so the cost should be shared.

While this may represent a study on paper without the benefit of inspection fieldwork to identify defects, it is a valuable intelligence gathering effort that will inform the private system where they stand before defects are determined. Understanding their financial position identified by subtracting cumulative depreciation charges from the O&M credit before defects have been identified gives the private system a best-case scenario before they commit in the cost to clean and inspect their system. This is a strategic decision point, and some private systems choose to opt out of the process here. Cleaning and inspection can cost several hundred thousand dollars, based on the size of the system. The procedure has been designed with a pause at this point, which gives the private system the time and opportunity to discuss internally and potentially walk away from the process at this point with no further obligation.

This Evaluation Study typically takes about a month to complete and will commence once payment is received. The cost recovery schedule for Evaluation Studies is as follows:

- $3,000 for < 100 accounts
- $5,000 for 100 – 500 accounts
- $8,000 for > 500 accounts

5.2 Inspection and Cleaning Expense

Prior to the inspection process, private systems must provide a copy of their as-built engineering drawings. County staff will review the drawings and help to coordinate inspection plans for the potable water system and wastewater system respectively. Although County staff will ultimately invest significant time throughout the planning, coordination, and inspection process, we do not assess any charges to the private system to recoup those costs. However, their private systems will incur significant expense in hiring their own contractors for various exercises and procedures involved in the inspection process as described in the paragraphs to follow.

On the potable water side, the County will select several road crossings, service connections, and hydrants to be excavated for inspection to ascertain construction materials used and methods employed. For larger developments that were completed in multiple phases, duplicative sets of these infrastructure points of interest may be chosen within each phase of the development. The private system must hire a contractor to expose these points of interest and to coordinate with the County once the excavations are completed to inspect the revealed infrastructure. The County cannot estimate the private systems' cost for this type of assistance as there are just too many variables and some larger developments may even be able to utilize their own personnel and equipment. County staff will endeavor to respond in an expeditious fashion so as to minimize the duration that pits are open for inspection to allow the private system to move forward with filling in the test pits and restoring the ground surface. There is no charge from the County to the private system for the County's labor associated with reviewing the plans, coordinating inspection, and the potable water system inspection effort.

The private system must also demonstrate that the potable water system isolation and air relief valves are functional by manipulating them to demonstrate they are operable and effective. County staff will be present to witness and confirm but will not manipulate private system valves. Valves that have not been exercised in some time are at increased risk of failure. It is the responsibility of the private system or its contractor to operate all valves so that if anything gets damaged in the process, the responsibility trail is clear. Again, there is no charge to the private system to recoup County staff time involved in observing performance of the valves within the potable water system.

On the wastewater side, the County does not clean and inspect the gravity collection system for private systems. Although the County does have the manpower and equipment in-house capable of performing that work, those teams are already fully committed, therefore, private systems must commission a contractor for that work. As a part of the Evaluation Study, the engineering consultant prepares an estimate of likely gravity collection system inspection and cleaning expense as a courtesy. This estimate is intended to inform the HOA or private system leadership as to what might be expected as a cost involved in this next step. The cost of this work can be significant, and depending on the size and complexity of the system this effort may cost hundreds of thousands of dollars and take several months to complete.

The County cannot recommend one contractor over another but can provide names of various local companies that are known to perform sewer inspection work. Contractors may price their work differently, but there are fairly well-established unit costs for this type of work. Typical unit costs in 2023 for this work include $4.25/LF of gravity sewer pipe and $300 per sewer lateral. For an average street with an 800-foot-long gravity line and 30 sewer laterals, this would equate to a $12,400 cost. If the private system decides to move forward with the process, the County will review the inspection reports and resultant videos at no additional cost to the private system.

Similar to the potable water side, on the wastewater side, the County must observe the proper function of all valves and must look inside each manhole. The private system or its contractor will be responsible for manipulating all valves and opening manhole lids. If the private system has a wastewater lift station, the County must visually inspect inside the lift station wet well, so the private system contractor would need to open any hatches or doors. For any wastewater force mains, the County will need to observe the pipe material in use and the type of restraint applied. It will be the responsibility of the private system to make any needed excavations to expose the force main pipe and complete all necessary ground restoration afterwards. Again, the County cannot estimate the cost of this support because there are too many variables and larger developments may even be able to use their own staff and equipment. There is no cost to the private system owner for County staff time involved in wastewater field inspections.

5.3 Asset Lifecycle (Depreciation) Charge

Infrastructure assets experience depreciation or a loss in value due to age and operation over their lifecycle. An average useful life for a system before replacement can be assumed based on typical industry standards. A charge is established to recoup an asset's lost value over time based on the RCN.

Table 3 details the useful life estimates used for the typical assets in this analysis. The asset lifecycle charge is equivalent to the total system depreciation. Instead of a straight-line depreciation that uses asset age as a homogeneous factor and ignores variance in asset type or condition, the depreciation within this analysis is based on condition curves.

Condition curves represent an asset's condition as a function of time. The aim of the curve is to support decision-making regarding the timing of assessment, inspection, and renewal. For this analysis, the combination of two depreciation condition curves, one for pipelines and another for other assets, was used to more adequately determine depreciation and account for the factors that influence the true value of the assets.

Figure 3 illustrates the two depreciation curves used in comparison to a straight-line depreciation. The y-axis is percent depreciation, where 100 percent indicates a fully-depreciated asset. The x-axis is the percent of life consumed where the asset's current age is divided by its useful life. The reader will note that in the shape of both depreciation curves, there is the implicit understanding that infrastructure tends to retain its value well relative to its age. The loss of value over time favors the private system owner relative to straight line depreciation.

Table 3 Useful Life by Asset Type

Asset Type	Useful Life
Pipelines	
Water Distribution	75 years
Reclaimed Water Distribution	75 years
Gravity Sewer	75 years
Sewer Force Main	75 years

Lift Station Components	
Pump	15 years
Wet Well	40 years
EI&C	20 years
Appurtenances	
Sewer Lateral	75 years
Water Service	40 years
Reclaimed Water Service	40 years
Hydrant	40 years
Manhole	50 years

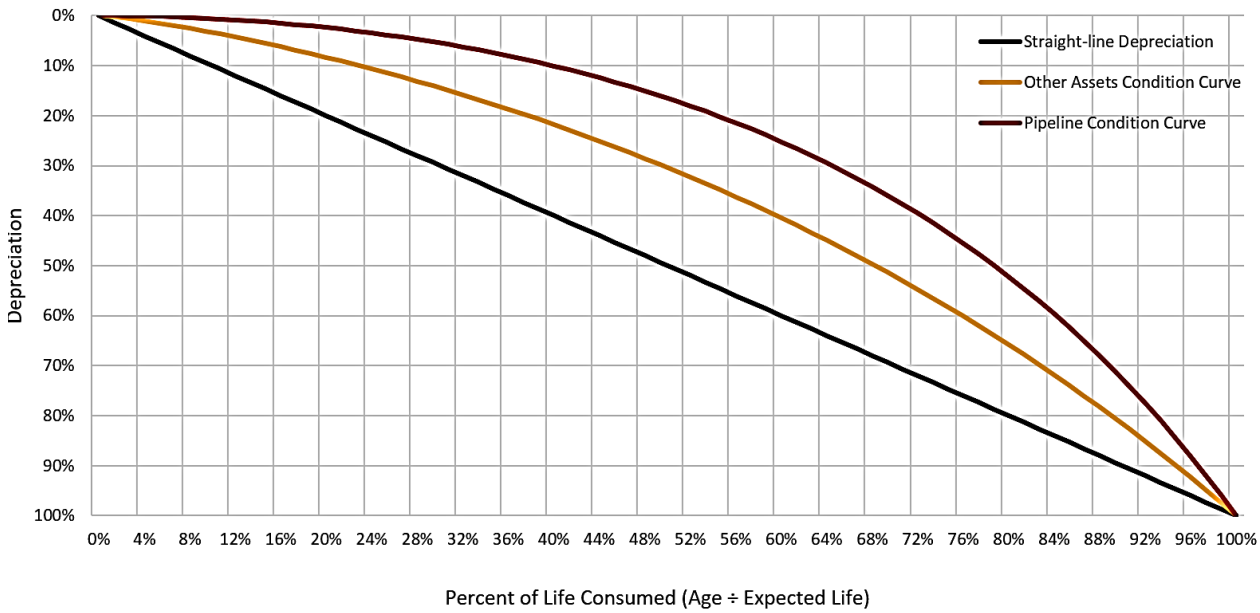


Figure 3 Comparison of Straight-Line and Condition Curve Depreciation

Consideration will be given for any significant refurbishment, replacement, or rehabilitation investment into the system. In such cases, asset age may be significantly reset to like-new conditions with extended expected useful life. The burden of proof will be on the private system owner to substantiate any such investments with adequate paperwork demonstrating the value and extent of the investment, applicable dates, and specifications of products used.

5.4 O&M Credit

The O&M credit calculation is based on the County's expenses to operate and maintain the assets on an annual basis. The O&M of a system are the activities necessary to deliver safe drinking water and maintain a functional sewer system. This charge is calculated as a credit since the private system's O&M expenses have already been paid in the past through the customer's water and sewer rates. As such, this component is retrospective.

Each private system varies, but typical O&M services include, but are not limited to:

- Lift station O&M (electricity and labor for cleaning, inspection, and EI&C maintenance).
- Routine sewer main cleaning/inspection and water main flushing.
- Repairing water main leaks.
- Fixing sewer line blockages.
- Lift station equipment maintenance and repairs.
- Hydrant and manhole maintenance.
- Valve exercises.

The O&M credit only applies to the years that the private system operated each asset. For an accurate count each year, the County provided the annual number of active customer accounts for the sample systems included in this report and a breakdown of operating expenses for water distributions, sewer collections, and lift stations.

5.4.1 O&M Expense per Customer Account

The total O&M expense per customer account was estimated in order to calculate the annual credit. The County provided actual annual expenses and customer accounts to use as a baseline. The expenses are divided by their respective total number of customer accounts each year to calculate the average annual credit per customer. We do not attempt to calculate the actual individual O&M credit for each customer. That would require historical billings for the customers within a particular private system divided by total water production or wastewater flows over that same period. Analysis of individual utility bills for each customer on a monthly basis, going back many decades in some cases, would exceed our capabilities. Unfortunately, it becomes possible that this approach may extend too much of a credit to conservative users or seasonal residents whose domiciles sit vacant for long periods and too little credit to those who consume the most.

Also, private systems which are geographically closer to the water and wastewater facilities theoretically impose less system O&M expense than those found further away. Water does not just magically appear at the private system, it typically must travel through miles of County pipe, through dozens of County valves, and past hundreds of County fire hydrants, past elevated storage tanks, and perhaps even gets booster pumped along the way. All these facilities must be maintained. Similarly, wastewater does not magically disappear when it leaves the private system. It is often pumped through a chain of consecutive County lift stations to a series of County gravity and force mains, through dozens of County valves, until it arrives at the County wastewater treatment plant. So, in calculating an average credit, we recognize that we may be awarding too little credit to private systems which are geographically located closer and too much credit to those who are further distant from County facilities.

To ameliorate the unintentional consequences of this adopted approach and to ensure that there is an abundantly fair process in place, the County decided to generously offer full O&M credit to any private system that pursues turnover. In other words, there is no penalty for how far your system is from County facilities or any bias factored in based on water use patterns. While the true O&M credit owed is likely to be only a small fraction of systemwide average, for simplicity, the County is willing to make this concession and award the full credit rather that attempt to precisely calculate the individual credit for each private system.

The vast majority of utility system customers are represented by single family homes but in cases where clusters of townhomes or condominiums are included, the O&M credits will be aggregated in the same manner as single-family residences. Table 4 summarizes the total O&M expense per customer account for fiscal year (FY) 2022 to calculate the O&M baseline.

Table 4 FY 2022 O&M Expense per Account

O&M Expenses[1]	**FY 2022**
Water Distribution Expense	$4,328,724
Sewer Collection Expense	$7,565,763
Lift Station Expense	$12,761,410
Number of Accounts	
Water Accounts	140,897
Sewer Accounts	119,888
Total O&M Expense per Account	
Water Distribution Expense ÷ Water Accounts	$31
Sewer Collection Expense ÷ Sewer Accounts	$63
Lift Station Expense ÷ Sewer Accounts	$106

Notes:
(1) O&M expenses are broken out by water, sewer, and lift stations. Reclaimed water O&M expenses are split between water and sewer.

The credit amount per account varies by year based on the County's historical total expenses and number of accounts. The County provided O&M expenses from FY 2009 through FY 2022. Expenses prior to FY 2009 are adjusted down each year of historical service based on the Florida utility price index. For example, to calculate FY 2008 O&M expenses, the FY 2009 O&M value is adjusted down by the inflation that occurred between FY 2008 and FY 2009.

To calculate the credit amount for a non-County owned system, the County provided the number of active customer accounts per system for each year going back to the system's construction. Information of the exact day a new customer account was activated may not be readily available for each non-County owned system. The analysis summarized in this report uses the installation date for meters to obtain the number of accounts per year. The number of active customer accounts is a rolling, cumulative total. Overall, the credit accounts for the lifetime total O&M paid by the system, adjusted to current dollars at the time.

5.5 Deficiency Evaluation and Charge

System deficiencies may be identified during a system design review or during inspection and cleaning and can be classified across a broad spectrum. Serious deficiencies that impair proper and/or safe operations or represent a potential threat to public safety must be corrected by the private system prior to transfer. This is consistent with protecting County ratepayers from subsidizing deferred maintenance on private systems and prioritizes the safety of County staff. Another reason for this is that for significant repairs, the full extent of deterioration is often obscured and does not manifest itself until repair work is underway. If an agreement is made for the County to take on a private system with serious defects that were not known at the time of transfer but are revealed within any warranty or guarantee period that may be adopted as part of the transfer agreement, the private system will absorb the cost of all such repairs by hiring their own contractor, reimbursement to the County or exercise of the security mechanism established for the transfer.

Some special conditions involving deficiencies that warrant correction prior to transfer include the following:

- **If an asset must be replaced in a manner that exceeds the calculated replacement cost**. This may occur if replacing a pipe would require horizontal directional drill or jack-and-bore construction, or if replacing the asset would necessitate the removal or replacement of a structure near the asset.
- **If an asset needs to be abandoned and replaced with new assets in a different configuration**. This may be the case if a pipe is routed through an area where the County does not have an existing easement (such as a golf course).
- **If assets are missing**. Current standards may require certain assets or components that are not currently installed and are required for operation (e.g., lift station telecommunication equipment, reclaimed water meters).
- **Collection system defect triggering subsidence beneath a roadway or near a structure**. When manholes and gravity collection pipes are in a failure state, they often manifest as ground subsidence because of the loss of soil into the wastewater system. This not only represents a threat to the public from collapse, but triggers increased infiltration and risk for plugging pipes with sand. At lift stations, it not only consumes wet well volume which risks SSO events but leads to pumps cycling faster than intended which risks motor burnout and causes erosion damage to pump impellers. These serious defects must be addressed by the private system owner prior to transfer.

On the lessor side of the deficiency spectrum are items which do not constitute current operational and/or safety concerns but, rather, reflect conditions that will either greatly increase the difficulty and/or cost for maintaining the system or that will significantly shorten the useful lives of assets. For such issues, the County may accept a deficiency charge to be assessed as a part of the transfer fee. Again, this protects County ratepayers from subsidizing private system deferred maintenance issues, or latent conditions likely to result in significant added maintenance cost. It is important to discern between normal wear and tear which is built into the asset depreciation charge and conditions likely to significantly shorten asset life. Table 5 presents selected examples of the differing classifications of deficiencies.

Table 5 Examples of the Differing Classes of Deficiencies

Examples	Deficiency requiring correction before transfer	Deficiency that is neither a current operational or safety concern and can be negotiated	Latent condition that shortens asset life and/or significantly increases the complexity/cost of maintenance and can be negotiated	Normal wear and tear accounted for through asset depreciation change
Manhole lid sunken below grade, missing cleanout at edge of ROW, broken water system valves or failing manhole showing ground subsidence	Yes	-	-	-
Fire hydrant and valve box lids unpainted	-	Yes	-	-
Oak trees or woody shrubs planted too close to meter boxes or cleanouts	-	-	Yes	
Age of pipes, pumps, and manholes	-	-	-	Yes

The deficiency charge during the Evaluation Study is generally presented as to-be-determined (TBD) since the deficiencies must first be identified and then analyzed to ascertain what classification they are and if they warrant repair by the private system owner. Next, the County will develop cost estimates for minor and/or latent deficiencies that have not been corrected. Cost estimates will be based on recent bids, contractor quotes, or past experiences. The County will present those estimates to the private system owner for consideration and collaboratively explore correction plans. The private system owner may elect to self-perform repairs via their own contractor or can delegate such to the County with an understanding that the County must be made whole for the cost of any such repairs.

The County has outlined the following items that form the basis of the deficiencies to be considered. This list references typical deficiencies that are often found and may be expanded or contracted based on the unique characteristics of the system in question. These are all items which must be rectified by the private system owner before transfer:

- **Potable Water**:
  - Valves that are not operational.
  - Wheel valves at blow-offs (these lack resiliency to corrosion and often fail within a matter of years).
  - Hydrants that are not operational or have not been maintained/painted.
  - Valve pads and/or valve tabs are broken or missing.
  - Meter boxes not at grade or that are being impacted by plantings and/or roots.
- **Wastewater**:
  - Lift Stations:
    - Telemetry missing or not operational.
    - Perimeter fence intact.
    - Pumps inoperative or inefficient (per pump report).
    - Electrical system not properly grounded.
    - Electrical panel not to current standards.
    - Wet well condition (with liner, needs inspection/without liner, inspected, and lined with approved product).
    - Valve assembly not in good working order.
    - Must have operable potable service for safety/maintenance.
    - Structural failure with ground subsidence (can be the connecting pipe).
  - Manholes:
    - Lids not at grade.
    - Lids not equipped with inflow dish to prevent rainwater infiltration.
    - Sand filled and/or obstructing flow.
    - Leaking/failing manholes with ground subsidence.
  - Forcemains:
    - Valve missing or not operational.
    - Air relief valves missing or not operational.
  - Gravity System:
    - Sags or dips in gravity lines that exceed 1-inch will be evaluated on a case-by-case basis. Factors to be considered include, but are not limited to, diameter of pipe, slope of pipe, flow, and existence of an upstream force main.
    - Broken pipes allowing water infiltration or root penetration into pipe.

        - Cleanouts at edge of right-of-way missing, not at grade or root bound.
        - Glued, cut-in PVC sanitary tee improperly connected at County riser pipe.
        - Failure as indicated by ground subsidence.
- **Reclaimed Water**:
    - Missing customer meters (master meters are not allowed).

5.6 Total Cost of Transfer

The total cost to a private or non-County owned system for transfer to the County can be expressed as the follows:

$$\textit{Total Cost} = \underset{\substack{\textit{private system}\\ \textit{payment to}\\ \textit{the County}}}{\textbf{Evaluation Study}} + \underset{\substack{\textit{private system}\\ \textit{payment to the}\\ \textit{contractor of their}\\ \textit{choice}}}{\textbf{Inspection \& Cleaning Expense}} + \underset{\substack{\textit{credit to}\\ \textit{the County}}}{\textbf{Asset Lifecycle Charge}} - \underset{\substack{\textit{credit to}\\ \textit{the private}\\ \textit{system}}}{\textbf{O\&M Credit}} + \underset{\substack{\textit{private system expense}\\ \textit{for repair and/or}\\ \textit{negotiated fee or}\\ \textit{reimbursement to}\\ \textit{the County}}}{\textbf{Deficiency Expense}}$$

A new, well-maintained system that has no design flaws or deficiencies would have the lowest total cost for a non-County owned system. In such a case, the total fee would reflect only the O&M credit, which would also be low since the system has not been in service long enough to accrue significant utility bill payments. The inspection and cleaning expense would be zero, assuming an inspection and cleaning was recently performed (such as final development inspection and sign off), and the County approves how the system has been maintained. The asset lifecycle fee would also be close to zero if the system is new. In general, a lower fee would be assessed if the system is relatively new compared to its assets' useful lives.

In the worst-case scenario, with an older, deteriorated system, the total charge may reflect a full replacement cost required for all assets to be brought up to current standards. Or, records may reveal that the non-County owned system has been poorly maintained and, therefore, requires extensive rehabilitation. In such a case, it is likely that the O&M credit would not be enough to offset the other substantial charges.

It is worth repeating that the formula for the Total Cost of Transfer shown above reflects a multitude of different types of values: there are expenses to be absorbed by the private system, credits that will be payable to the private system, and fees payable to the County. As a courtesy, the Cleaning and Inspection Expense is offered as an estimate to help the private system plan for what could be an appreciable expense. However, the private system may be able to negotiate more favorable rates to complete this work as long as the digital records meet the County's standards.

As a part of the field inspection process, the County will witness the private system operating their system appurtenances, and County staff will inspect various aspects of the system (such as pulling manholes, exposing the pipes used to cross roadways with and exposing hydrant piping restraint systems, etc.) with the assistance of the private system's staff or their contractor. The County does not attempt to estimate how much this might cost the private system because there is just too much variability. Some systems will not require any excavations and may have maintenance staff on hand for the operational components whereas others will need to hire out this work to a contractor.

Finally, not included in these costs would be any legal or survey work needed for sketches and descriptions for easements or engineering costs related to preparing as-builts.

6 METHODOLOGY DEMONSTRATION

This section provides an example of the developed methodology applied to a range of hypothetical developments of varying size and complexity. Although there are over 400 private systems in Manatee County, no two are identical in size, age, complexity, and materials used. The authors have attempted to generally bracket some common system sizes, ages, and complexity parameters to demonstrate the methodology employed in the Evaluation Study. From these results, customers may infer how their own system might be so classified in the hopes that it helps them to decide if they want to pursue the process.

In developing hypothetical examples, the team chose to consider a small system, a medium system, and a large system. It was believed that this approach should yield applicable benchmarks for most private systems. There are basic commonalities in the approach for each example. One of the most important being the presumption of useful life for the assets. Just like an automobile or a home's roof or AC system, nothing lasts forever, and all infrastructure must eventually be replaced. The useful life duration varies for each class of assets and was previously presented in Table 3. Figure 3 also presented the depreciation curves to be applied to pipelines and all other assets based on the percent of useful life elapsed and expected life remaining.

6.1 Setting Up the Private System Transfer Examples

The single most critical parameter in describing private systems is the number of customers. Essentially, most other infrastructure parameters are scalable from there. For the examples we have chosen to illustrate the process, we have composited hypothetical small, medium, and large systems with 70 homes, 700 homes, and 1,600 homes, respectively. In these examples, only the medium and large systems are plumbed with reclaimed water, but all three systems have at least one wastewater lift station.

6.1.1 The Small Size System Example

Table 6 presents the parameters of the example small system. The team has developed this example to be a representative system; it is not based on any particular location or development. This example system has 70 homes. The system has 550 feet of water and wastewater piping, 10 fire hydrants, 15 manholes and 1 lift station. There is one water service and one sewer lateral per home.

Another important parameter is the age of the system because this helps to establish not only the depreciation charge but also the cumulative O&M credit. In this example, we stipulate that the development was built in 2 phases between 25 and 28 years ago. The average age of a home in this example is 26.7 years.

Table 6 Small System Example Parameters

Category	Quantity	Units
Number of Homes	70	-
Potable Water		
Pipelines	550	feet
Hydrants	10	each
Meters	70	each
Wastewater		

Gravity Collection Pipelines	550	feet
Forcemains	50	feet
Lift Stations	1	each
Manholes	15	feet
Sewer Laterals	70	each
Reclaimed Water		
Pipelines	0	feet
Meters	0	each

The first element of cost for the private system is the Evaluation Study. Recall from Section 5 that for a system with less than 100 accounts, the fee for this would be $3,000. The County believes this is fair since it represents less than half of the direct cost for the County to have the evaluation performed.

The Evaluation Study defines the system components and parameters. This helps to estimate the cost of the gravity collection system cleaning and inspection. Typical unit costs for this work were identified in Section 5 as $300 per lateral and $4.25 per linear foot for the collection system piping. Again, this is only provided as an estimate. The County will not do this work for the private system, and they must secure their own contractor and may or may not be able to negotiate more favorable rates, depending on market conditions. Table 7 presents the estimated costs for cleaning and inspection of the gravity collection system for this small system example of $23,338. Note, this does not include fieldwork to demonstrate operation of the system, as previously discussed. The County does not attempt to estimate that expense because there are too many variables.

Table 7 Estimated Small System Example Cleaning and Inspection Cost

Item	Number of Units	Estimated Unit Cost	Estimated Cleaning & Inspection Fee
Gravity Sewer	550 linear feet	$4.25	$2,338
Laterals	70 each	$300	$21,000
Total			**$23,338**

The next step in the process is using the system age to determine the depreciation charge on the assets. This is also a part of the Evaluation Study effort. Table 8 summarizes the depreciation calculation exercise for this private system example. For example, the total replacement cost of the infrastructure assets in today's dollars would be $1,417,923 and the total depreciation charge is $525,701. Note that some assets, such as the lift station pumps and electrical system, are already beyond their projected useful lifespan, thus they have a depreciated value of zero.

Table 8 Small System Example Asset Depreciation Charge

Asset Type	Current Estimated Replacement Costs	Condition Curve Depreciation			Remaining Value Net of Depreciation	Asset Lifespan Expended (%)
		Shape Factor 1.25	Shape Factor 2.0	Total		
Pipelines						
Water Pipeline	$95,000	-	($7,067)	($7,067)	$87,933	-7.44%
Reclaimed Water Pipeline	-	-	-	-	-	-
Sewer Pipeline	$136,400	-	($10,946)	($10,946)	$125,454	-8.02%
Forcemain Pipeline	$7,650	-	($665.76)	($666)	$6,984	-8.70%
Lift Stations						
Pump	$53,926	($53,926)	-	($53,926)	-	-100.00%
Wet Well	$185,277	($96,710)	-	($96,710)	$88,567	-52.20%
Electrical	$126,500	($126,500)	-	($126,500)	-	-100.00%
Appurtenances						
Hydrant	$50,000	($26,099)	-	($26,099)	$23,901	-52.20%
Lateral	$428,330	($79,053)	-	($79,053)	$349,277	-18.46%
Water Service	$70,000	($33,853)	-	($33,853)	$36,147	-48.36%
Reclaimed Water Service	-	-	-	-	-	-
Manhole	$264,840	($90,882)	-	($90,882)	$173,958	-34.32%
Total	**$1,417,923**	**($507,023)**	**($18,679)**	**($525,701)**	**$892,222**	**-37.08%**

Table 9 summarizes the accrued O&M credit in this example for representative expenses over the study period for wastewater lift station, wastewater collection system, and potable water distribution system O&M costs. Note that O&M credits were increased over time as might be expected due to inflationary factors but also the number of homes increased in 1998. The total accrued O&M credit to be extended to the private system in this transfer would be $268,585. Again, this does not include fieldwork to demonstrate operation of the system, or any legal or survey expenses.

Table 9 Summary of O&M Credit in Small System Example

Year	Annual Credit Amount			Utility Accounts (per year)			Total Credit
	Water	Sewer	Lift Station (per account served)	Water Accounts	Sewer Accounts	Accounts Served by Lift Stations	
2022	$31	$63	$106	70	70	70	$14,000
2021	$29	$57	$110	70	70	70	$13,729
2020	$30	$60	$100	70	70	70	$13,277
2019	$30	$50	$95	70	70	70	$12,249
2018	$31	$53	$88	70	70	70	$12,035
2017	$31	$48	$83	70	70	70	$11,321
2016	$32	$38	$75	70	70	70	$10,171
2015	$31	$37	$77	70	70	70	$10,117
2014	$30	$37	$75	70	70	70	$9,956
2013	$27	$33	$74	70	70	70	$9,449
2012	$28	$32	$73	70	70	70	$9,311
2011	$28	$28	$72	70	70	70	$8,895
2010	$34	$32	$70	70	70	70	$9,504
2009	$33	$41	$74	70	70	70	$10,398
2008	$32	$40	$73	70	70	70	$10,140
2007	$31	$39	$71	70	70	70	$9,903
2006	$30	$38	$69	70	70	70	$9,606
2005	$30	$37	$67	70	70	70	$9,350
2004	$29	$36	$66	70	70	70	$9,151
2003	$28	$35	$63	70	70	70	$8,797
2002	$27	$34	$62	70	70	70	$8,668
2001	$27	$34	$62	70	70	70	$8,652

2000	$27	$34	$61	70	70	70	$8,588
1999	$27	$34	$61	70	70	70	$8,557
1998	$27	$34	$61	70	70	70	$8,535
1997	$27	$34	$61	40	40	40	$4,849
1996	$26	$33	$59	40	40	40	$4,745
1995	$26	$32	$58	40	40	40	$4,631
						Total	**$268,585**

Revisiting the expression for system transfer Total Cost, we can now insert the values we have determined:

$$\textit{Total Cost} = \underset{\substack{\textit{private system}\\ \textit{payment to}\\ \textit{the County}}}{\textit{Evaluation Study}} + \underset{\substack{\textit{private system}\\ \textit{payment to the}\\ \textit{contractor of their}\\ \textit{choice}}}{\textit{Inspection \& Cleaning Expense}} + \underset{\substack{\textit{credit to}\\ \textit{the County}}}{\textit{Asset Lifecycle Charge}} - \underset{\substack{\textit{credit to}\\ \textit{the private}\\ \textit{system}}}{\textit{O\&M Credit}} + \underset{\substack{\textit{private system expense}\\ \textit{for repair and/or}\\ \textit{negotiated fee or}\\ \textit{reimbursement to}\\ \textit{the County}}}{\textit{Deficiency Expense}}$$

***Total Cost* = $3,000 + $23,338 + $525,701 - $268,585 + TBD**

The cost of deficiencies are reflected as "TBD" because they cannot be accurately determined until the inspection process has been completed. So, for this small system, the **Total Cost = $283,454** plus the cost to repair any defects or deficiencies identified through inspection. It bears restating that the cleaning and inspection expense is presented as an estimate and is paid directly to the cleaning and inspection contractor by the private system. The private system may be able to negotiate a better cost for this work, but it must be completed in compliance with the County's standards as presented in Appendix A.

While the total cost of the transfer process for this small system is estimated at $283,454, the actual transfer fee paid to the County would be the asset lifecycle charge minus the O&M credit, plus any deficiency expense, since the evaluation study fee would already have been paid to the County and the inspection and cleaning expense would be paid by the private system to its contractor.

The private system may elect at any point in this process not to proceed with transfer of the system to the County. The Evaluation Study will develop the customized estimates, credits, and debits above for each element in particular for the system and should help the private system leadership in deciding if they want to continue to pursue the turnover pathway.

6.1.2 The Medium Size System Example

Table 10 presents the parameters of the example medium system. The team has developed this example to be a representative system; it is not based on any particular location or development. This example system has 700 homes. The system has about 9 miles of potable water system piping, 9.5 miles of reclaimed water system piping, and 10 miles of wastewater system piping (inclusive of gravity collection and forcemain). The system has 180 manholes, 100 fire hydrants, and 1 potable water meter, 1 reclaimed water meter, and 1 sewer lateral per residence. There are two lift stations.

The age of the system is used as a parameter because it helps to establish not only the depreciation charge but also the cumulative O&M credit. In this example, we stipulate that the development was built in 4 phases with the first 2 phases each consisting of 150 homes built 25 and 27 years ago, respectively. The final 2 phases consisted of 200 homes each built 23 and 21 years ago, respectively. The average age of a home in this example is 23.7 years.

Table 10 Medium System Example Parameters

Category	Quantity	Units
Number of Homes	700	-
Potable Water		
Pipelines	48,000	feet
Hydrants	100	each
Meters	700	each
Wastewater		
Gravity Collection Pipelines	45,500	feet
Forcemains	7,000	feet
Lift Stations	2	each
Manholes	180	each
Sewer Laterals	700	each
Reclaimed Water		
Pipelines	50,200	feet
Meters	700	each

The first element of cost for the private system is the Evaluation Study. Recall from Section 5 that for a system with more than 500 accounts, the fee for this would be $8,000. That is less than the direct cost for the County to have the evaluation performed.

The Evaluation Study defines the system components and parameters. This helps us to project or estimate the cost of the gravity collection system cleaning and inspection. Typical unit costs for this work were identified in Section 5 as $300 per lateral and $4.25 per linear foot for the collection system piping. Again, this is only provided as an estimate. The County will not do this work for the private system, and they must secure their own contractor and may or may not be able to negotiate more favorable rates, depending on

market conditions. Table 11 presents the estimated costs for cleaning and inspection of the gravity collection system for this medium system example of $403,375. Again, this does not include fieldwork to demonstrate operation of the system, or any legal or survey expenses.

Table 11 Estimated Medium System Example Cleaning and Inspection Cost

Item	Number of Units	Estimated Unit Cost	Estimated Cleaning & Inspection Fee
Gravity Sewer	45,550 linear feet	$4.25	$193,375
Laterals	700 each	$300	$210,000
Total			**$403,375**

The next step in the process is using the system age to determine the depreciation charge on the assets. This is also a part of the Evaluation Study effort. Table 12 summarizes the depreciation calculation exercise for this private system example. For example, the total replacement cost of the infrastructure assets in today's dollars would be $48,442,286 and the total depreciation charge is $5,384,188. Note that some assets, such as the lift station pumps and electrical system are already beyond their projected useful lifespan, thus they have a depreciated value of zero.

Table 12 Medium System Example Asset Depreciation Charge

Asset Type	Current Estimated Replacement Costs	Condition Curve Depreciation			Remaining Value Net of Depreciation	Asset Lifespan Expended (%)
		Shape Factor 1.25	Shape Factor 2.0	Total		
Pipelines						
Water Pipeline	$12,001,000	-	($774,582)	($774,582)	$11,226,418	-6.45%
Reclaimed Water Pipeline	$12,044,000	-	($799,252)	($799,252)	$11,244,748	-6.64%
Sewer Pipeline	$13,156,000	-	($867,012)	($867,012)	$12,288,988	-6.59%
Forcemain Pipeline	$1,148,500	-	($81,560)	($81,560)	$1,066,940	-7.10%
Lift Stations						
Pump	$107,852	($107,852)	-	($107,852)	-	-100.00%
Wet Well	$370,554	($161,039)	-	($161,039)	$209,515	-43.46%
Electrical	$253,000	($253,000)	-	($253,000)	-	-100.00%
Appurtenances						
Hydrant	$500,000	($204,938)	-	($204,938)	$295,062	-40.99%
Lateral	$4,283,300	($669,150)	-	($669,150)	$3,614,150	-15.62%
Water Service	$700,000	($279,727)	-	($279,727)	$420,273	-39.96%
Reclaimed Water Service	$700,000	($279,727	-	($279,727	$420,273	-39.96%
Manhole	$3,178,080	($906,350)	-	($906,350)	$2,271,730	-28.52%
Total	**$48,442,286**	**($2,861,783)**	**($2,522,406)**	**($5,384,188)**	**$43,058,098**	**-11.11%**

Table 13 summarizes the accrued O&M credit in this example for representative expenses over the study period for wastewater lift station, wastewater collection system, and potable water distribution system O&M costs. Note that O&M credits were increased over time as might be expected due to inflationary factors but also the number of homes increased in 1998, 2000, and 2002. The total accrued O&M credit to be extended to the private system in this transfer would be $2,432,652.

Table 13 Summary of O&M Credit in Medium System Example

Year	Annual Credit Amount			Utility Accounts (per year)			Total Credit
	Water	Sewer	Lift Station (per account served)	Water Accounts	Sewer Accounts	Accounts Served by Lift Stations	
2022	$31	$63	$106	700	700	700	$140,000
2021	$29	$57	$110	700	700	700	$137,295
2020	$30	$60	$100	700	700	700	$132,769
2019	$30	$50	$95	700	700	700	$122,492
2018	$31	$53	$88	700	700	700	$120,345
2017	$31	$48	$83	700	700	700	$113,208
2016	$32	$38	$75	700	700	700	$101,712
2015	$31	$37	$77	700	700	700	$101,172
2014	$30	$37	$75	700	700	700	$99,561
2013	$27	$33	$74	700	700	700	$94,495
2012	$28	$32	$73	700	700	700	$93,109
2011	$28	$28	$72	700	700	700	$88,950
2010	$34	$32	$70	700	700	700	$95,037
2009	$33	$41	$74	700	700	700	$103,982
2008	$32	$40	$73	700	700	700	$101,397
2007	$31	$39	$71	700	700	700	$99,030
2006	$30	$38	$69	700	700	700	$96,062
2005	$30	$37	$67	700	700	700	$93,500
2004	$29	$36	$66	700	700	700	$91,514
2003	$28	$35	$63	700	700	700	$87,972

2002	$27	$34	$62	700	700	700	$86,676
2001	$27	$34	$62	500	500	500	$61,801
2000	$27	$34	$61	500	500	500	$61,344
1999	$27	$34	$61	300	300	300	$36,672
1998	$27	$34	$61	300	300	300	$36,579
1997	$27	$34	$61	150	150	150	$18,182
1996	$26	$33	$59	150	150	150	$17,795
						Total	**$2,432,652**

Revisiting the expression for system transfer Total Cost, we can now insert the values we have determined:

$$\textit{Total Cost} = \underset{\substack{\textit{private system}\\ \textit{payment to}\\ \textit{the County}}}{\textbf{\textit{Evaluation Study}}} + \underset{\substack{\textit{private system}\\ \textit{payment to the}\\ \textit{contractor of their}\\ \textit{choice}}}{\textbf{\textit{Inspection \& Cleaning Expense}}} + \underset{\substack{\textit{credit to}\\ \textit{the County}}}{\textbf{\textit{Asset Lifecycle Charge}}} - \underset{\substack{\textit{credit to}\\ \textit{the private}\\ \textit{system}}}{\textbf{\textit{O\&M Credit}}} + \underset{\substack{\textit{private system expense}\\ \textit{for repair and/or}\\ \textit{negotiated fee or}\\ \textit{reimbursement to}\\ \textit{the County}}}{\textbf{\textit{Deficiency Expense}}}$$

Total Cost = **$8,000 + $403,375 + $5,384,188 - $2,432,652 + TBD**

The cost of deficiencies are reflected as "TBD" because they cannot be accurately determined until the inspection process has been completed. So, for this medium system, the **Total Cost = $3,362,911** *plus* the cost to repair any defects or deficiencies identified through inspection. The cleaning and inspection expense is presented as an estimate and is paid directly to the cleaning and inspection contractor by the private system. The private system may be able to negotiate a better cost for this work, but it must be completed in compliance with the County's standards as presented in Appendix A.

While the total cost of the transfer process for this small system is estimated at $3,362,911, the actual transfer fee paid to the County would be the asset lifecycle charge minus the O&M credit, plus any deficiency expense, since the evaluation study fee would already have been paid to the County and the inspection and cleaning expense would be paid by the private system to its contractor.

The private system may elect at any point in this process not to proceed with transfer of the system to the County. The Evaluation Study will develop the customized estimates, credits, and debits above for each element in particular for the system and should help to private system leadership in deciding if they want to continue to pursue the turnover pathway.

6.1.3 The Large Size System Example

Table 14 presents the parameters of the example large system. The team has developed this example to be a representative system; it is not based on any particular location or development. This example system has 1,600 homes. The system has about 17 miles each of potable water system piping, reclaimed water system

piping, and wastewater system piping. The system has 350 manholes, 160 fire hydrants, and 1 potable water meter, 1 reclaimed water meter, and 1 sewer lateral per residence. There are three lift stations.

Another important parameter is the age of the system because this helps to establish not only the depreciation charge but also the cumulative O&M credit. In this example, we stipulate that the development was built in 5 phases ranging from 100 to 700 homes per phase built, ranging from 18 to 27 years ago. The average age of a home in this example is 23.9 years old.

Table 14 Large System Example Parameters

Category	Quantity	Units
Number of Homes	1,600	-
Potable Water		
Pipelines	90,500	feet
Hydrants	160	each
Meters	1,600	each
Wastewater		
Gravity Collection Pipelines	87,500	feet
Forcemains	1,500	feet
Lift Stations	3	each
Manholes	350	each
Sewer Laterals	1,600	each
Reclaimed Water		
Pipelines	88,100	feet
Meters	1,600	feet

The first element of cost for the private system is the Evaluation Study. Recall from Section 5 that for a system with more than 500 accounts, the fee for this would be $8,000. That is less than the direct cost the County will have to pay to have the evaluation performed.

The Evaluation Study defines the system components and parameters. This helps us to project or estimate the cost of the gravity collection system cleaning and inspection. Typical unit costs for this work were identified in Section 5 as $300 per lateral and $4.25 per linear foot for the collection system piping. This is only provided as an estimate. The County will not do this work for the private system, and they must secure

their own contractor and may or may not be able to negotiate more favorable rates, depending on market conditions. Table 15 presents the estimated costs for cleaning and inspection of the gravity collection system for this large system example of $851,875. Again, this does not include fieldwork to demonstrate operation of the system, or any legal or survey expenses.

Table 15 Estimated Large System Example Cleaning and Inspection Cost

Item	Number of Units	Estimated Unit Cost	Estimated Cleaning & Inspection Fee
Gravity Sewer	87,500 linear feet	$4.25	$371,875
Laterals	1,600 each	$300	$480,000
Total			**$851,875**

The next step in the process is using the system age to determine the depreciation charge on the assets. This is also a part of the Evaluation Study effort. Table 16 summarizes several key values for this private system example. For example, the total replacement cost of the infrastructure assets in today's dollars would be $90,967,209 and the total depreciation charge is $9,824,709.

Table 16 Large System Example Asset Depreciation Charge

Asset Type	Current Estimated Replacement Costs	Condition Curve Depreciation			Remaining Value Net of Depreciation	Asset Lifespan Expended (%)
		Shape Factor 1.25	Shape Factor 2.0	Total		
Pipelines						
Water Pipeline	$25,014,000	-	($1,687,372)	($1,687,372)	$23,326,628	-6.75%
Reclaimed Water Pipeline	$22,808,200	-	($1,279,088)	($1,279,088)	$21,529,112	-5.61%
Sewer Pipeline	$21,876,000	-	($1,331,105)	($1,331,105)	$20,544,895	-6.08%
Forcemain Pipeline	$201,900	-	($13,129.57)	($13,129.57)	$188,770	-6.50%
Lift Stations						
Pump	$161,778	($161,778)	-	($161,778)	-	-100.00%
Wet Well	$555,831	($204,337)	-	($204,337)	$351,494	-36.76%
Electrical	$379,500	($356,225)	-	($356,225)	$23,245	-93.87%
Appurtenances						
Hydrant	$800,000	($298,933)	-	($298,933)	$501,067	-37.37%
Lateral	$9,790,400	($1,554,620)	-	($1,554,620)	$8,235,780	-15.88%
Water Service	$1,600,000	($652,823)	-	($652,823)	$947,177	-40.80%
Reclaimed Water Service	$1,600,000	($652,823)	-	($652,823)	$947,177	-40.80%
Manhole	$6,179,600	($1,632,444)	-	($1,632,444)	$4,547,156	-26.42%
Total	**$90,967,209**	**($5,514,014)**	**($4,310,695)**	**($9,824,709)**	**$81,142,500**	**-10.80%**

Table 17 summarizes the accrued O&M credit in this example for representative expenses over the study period for wastewater lift station, wastewater collection system, and potable water distribution system O&M costs. Note that O&M credits were increased over time as might be expected due to inflationary factors but also the number of homes increased in 1999, 2001, 2003, and 2005. The total accrued O&M credit to be extended to the private system in this transfer would be $5,600,535.

Table 17 Summary of O&M Credit in Large System Example

Year	Annual Credit Amount			Utility Accounts (per year)			Total Credit
	Water	Sewer	Lift Station (per account served)	Water Accounts	Sewer Accounts	Accounts Served by Lift Stations	
2022	$31	$63	$106	1,600	1,600	1,600	$320,000
2021	$29	$57	$110	1,600	1,600	1,600	$313,817
2020	$30	$60	$100	1,600	1,600	1,600	$303,472
2019	$30	$50	$95	1,600	1,600	1,600	$279,982
2018	$31	$53	$88	1,600	1,600	1,600	$275,075
2017	$31	$48	$83	1,600	1,600	1,600	$258,762
2016	$32	$38	$75	1,600	1,600	1,600	$232,483
2015	$31	$37	$77	1,600	1,600	1,600	$231,250
2014	$30	$37	$75	1,600	1,600	1,600	$227,568
2013	$27	$33	$74	1,600	1,600	1,600	$215,988
2012	$28	$32	$73	1,600	1,600	1,600	$212,821
2011	$28	$28	$72	1,600	1,600	1,600	$203,314
2010	$34	$32	$70	1,600	1,600	1,600	$217,227
2009	$33	$41	$74	1,600	1,600	1,600	$237,674
2008	$32	$40	$73	1,600	1,600	1,600	$231,764
2007	$31	$39	$71	1,600	1,600	1,600	$226,354
2006	$30	$38	$69	1,600	1,600	1,600	$219,570
2005	$30	$37	$67	1,600	1,600	1,600	$213,714
2004	$29	$36	$66	1,500	1,500	1,500	$196,101
2003	$28	$35	$63	1,500	1,500	1,500	$188,512
2002	$27	$34	$62	1,200	1,200	1,200	$148,587

2001	$27	$34	$62	1,200	1,200	1,200	$148,321
2000	$27	$34	$61	1,000	1,000	1,000	$122,687
1999	$27	$34	$61	1,000	1,000	1,000	$122,241
1998	$27	$34	$61	700	700	700	$85,352
1997	$27	$34	$61	700	700	700	$84,851
1996	$26	$33	$59	700	700	700	$83,045
						Total	**$5,600,535**

Revisiting the expression for system transfer Total Cost, we can now insert the values we have determined:

$$\textit{Total Cost} = \underset{\substack{\textit{private system}\\ \textit{payment to}\\ \textit{the County}}}{\textit{Evaluation Study}} + \underset{\substack{\textit{private system}\\ \textit{payment to the}\\ \textit{contractor of their}\\ \textit{choice}}}{\textit{Inspection \& Cleaning Expense}} + \underset{\substack{\textit{credit to}\\ \textit{the County}}}{\textit{Asset Lifecycle Charge}} - \underset{\substack{\textit{credit to}\\ \textit{the private}\\ \textit{system}}}{\textit{O\&M Credit}} + \underset{\substack{\textit{private system expense}\\ \textit{for repair and/or}\\ \textit{negotiated fee or}\\ \textit{reimbursement to}\\ \textit{the County}}}{\textit{Deficiency Expense}}$$

***Total Cost* = $8,000 + $851,875 + $9,824,709 - $5,600,535 + TBD**

The cost of deficiencies are reflected as "TBD" because they cannot be accurately determined until the inspection process has been completed. So, for this large system, the **Total Cost = $5,084,049** *plus* the cost to repair any defects or deficiencies identified through inspection. The cleaning and inspection expense is presented as an estimate and is paid directly to the cleaning and inspection contractor by the private system. The private system may be able to negotiate a better cost for this work, but it must be completed in compliance with the County's standards as presented in Appendix A.

While the total cost of the transfer process for this small system is estimated at $5,084,049, the actual transfer fee paid to the County would be the asset lifecycle charge minus the O&M credit, plus any deficiency expense, since the evaluation study fee would already have been paid to the County and the inspection and cleaning expense would be paid by the private system to its contractor.

The private system may elect at any point in this process not to proceed with transfer of the system to the County. The Evaluation Study will develop customized estimates, credits, and debits above for each element in particular for the system and should help to private system leadership in deciding if they want to continue to pursue the turnover pathway.

7 SUMMARY

The transfer procedure has gone through many revisions and refinements. Through the development of this process, the County has attempted to strike a balance between creating a process to facilitate private system transfers while also protecting the ratepayer interests. Each transfer opportunity is unique, and the process continues to evolve as new situations and challenges are encountered, worked through, and overcome. It is envisioned that this manual will be periodically updated to capture improvements and developments in

thought. Costs must also be periodically refreshed to account for inflation. It is envisioned that this document will be updated and brought back to the County Commission for approval every few years.

It is important for private systems to recognize this process is entirely voluntary and they can walk away from discussions with the County at any time. There are many reasons private system owners may have an interest in transferring their system to the County. The nominal cost of the initial Evaluation Study is designed to only recover about 30 to 50 percent of the County's direct cost. After that has been completed, the system owner will have an estimate to perform the cleaning and inspection process based on their system's size and complexity. Upon being provided with this estimate, some entities may consider this too significant an expense and decline to pursue the transfer further. Those entities are welcome to walk away from the transfer discussion without further obligation to the County. The County is also not attempting to recover any expense associated with County labor and equipment involved, which includes meetings with leadership; reviewing as-built drawings; reviewing condition assessment reports and collection system CCTV tapes; field inspection efforts; gathering cost data on defects; and the review and preparation of documents for processing and commission approval.

One final note to add to this discussion is the need for access easements. As a part of the process, the County must be granted permanent, non-exclusive easements granting rights to operate, repair, and replace the infrastructure assets. This includes linear easements of a suitable width for any gravity lines or forcemains which lie on private property. The burden for any land surveying, sketches or legal descriptions of easements falls onto the private system owner.

This effort revealed that an industry standard asset valuation approach could be used despite the uniqueness of this type of transaction. In summation, the total cost for overall system transfer is comprised of five components:

1) The Evaluation Study which cost is divided between the private system and the County.
2) The expense to clean and inspect the system as paid by the private system owner to the contractor of their choosing.
3) Charges to recoup depreciated asset value payable by the private system owner to the County.
4) A retrospective credit for costs associated with O&M paid over time through customer rates payable by the County to the private system.
5) Correction of deficiencies that negatively impact current operations and/or safety and charges for correction of minor defects/latent conditions as needed.

Several demonstrations of this procedure were performed using examples of non-County systems of varying characteristics.

Appendix A:

Guidelines for Private Systems

Potable Water and Wastewater Utility Transfers Guidance Supplement

August 2023

Table of Contents

Introduction

This Attachment contains supplemental details and forms used to facilitate transfer of a non-County owned utility system (private system) to Manatee County (County). This is designed to help non-County entities navigate the process. Not every situation will be identical and, in some instances, not all documents or procedures will be required. For specific questions and guidance, please contact the Utilities Department.

Process At-A-Glance

Step	General	Specifics
Step 1	Initial inquiry	Email or letter from private system Owner to County inquiring about the process
Step 2	Consultation meeting	Owner or representative and other parties and Utilities staff
Step 3	Remit Evaluation Study fee	County consultant will work with utility staff to gather data and complete Draft Evaluation Study
Step 4	Draft Evaluation Study	Study will be delivered to the Owner for consideration
Step 5	Cleaning and inspection – Part 1	Private system hires contractor to clean and inspect gravity collection system
Step 6	Submission of inspection videos and reports to the County	Utility staff reviews materials and develops a deficiency list with cost estimates
Step 7	Cleaning and inspection – Part 2	County staff attend Owner or their representative to witness proper system operation, manhole lids being removed and to make inspections at locations excavated to reveal construction methods/materials
Step 8	Finalize Evaluation Study	With deficiencies now fully identified, the Evaluation Study will be finalized
Step 9	Agreement reached on terms of transfer	This will trigger the process for preparing closing documents
Step 10	Deficiency remediation (for repairs the Owner is executing and must be completed prior to transfer)	Repair and then inspection by County to confirm issues have been satisfactorily corrected
Step 11	Paperwork and legal Formalities	Document preparation (easements, bill of sale, transfer agreement, etc.)
Step 12	Document Execution	Owner
Step 13	CAO review of assembled documents and submission to e-agenda	The County Attorney will review the packet prior to e-agenda submission
Step 14	Board acceptance/closing document execution	Board of County Commissioners
Step 15	Recording of Documents	County clerk
Step 16	Handoff keys to locks, etc.	Owner/County collaboration

Every transfer will be unique, the steps shown above are general in nature. Some transfers may follow an abbreviated path while others may go through iterations of these steps or have special challenges that require steps not reflected here.

Requirements

The transfer of ownership of the private, non-County owned utility system to County ownership is completed through acceptance by the Manatee County Board of County Commissioners (Board) and Resolution 99-115, which is instrumental to this process, is included as Attachment 1. At time of construction, all systems are required to meet engineering standards in place, but those standards change over time. Any system that is to be transferred to Manatee County must be inspected and deficiencies addressed to bring the system up to current standards regardless of the standards that were in place at the time of initial construction. The standards can be found on the Manatee County website www.mymanatee.org or obtained through the Department.

Initiating the Process

A formal request is not required at this stage. Contact by a representative of the owner of the non- County owned utility by email or through a letter will be enough to begin the preliminary process.

Initial Consultation Meeting

After an inquiry regarding transfer of a non-County owned utility system is received, departmental staff will coordinate a meeting with the owner or representative and any other interested persons identified by the property owners. During this meeting, the process will be explained in detail, preliminary charges will be explained, and questions will be addressed. If the private system desires to move forward, the next step would be the Evaluation Study.

Merits of the Evaluation Study

There is a small fee for the Evaluation Study to quantify cost elements used in transfer fee determination. This is an analysis by one of the County's engineering consultants and forms the basis for the transfer fee discussions. The fee is assessed according to a 3-tiered system of costs based on system size. If the system is interested in pursuing this, they should send a formal request via email to the County for the study and remit the fee. This study generally takes about a month to complete.

An important part of the study is estimation of gravity collection system cleaning and inspection expenses. If a private system is less than 5 years old, they can utilize inspection records from initial construction, however, older systems must be cleaned and inspected. The County does not have the bandwidth to do that work for private systems and then charge them the expense. So the private system must commission this work with an outside contractor. The consultant will use fairly recent industry cost benchmarks for that work to estimate how much the private system might expect to pay for this service. Depending on private system size, this effort may cost hundreds of thousands of dollars and so this estimate is provided to help the private system budget for a significant expense.

The Evaluation Study helps to frame how much it is likely to cost for the transfer of utility systems from private to public. This is important information because at any point the private system may elect to walk away from this process and the earlier that such a decision is made, the less expense the private system will have incurred in the process. Water and wastewater infrastructure can be a significant, but largely hidden investment since most of it rests out-of-sight below ground. Even with the relatively favorable offering of full O&M credit for system O&M and depreciation curves which reflect gradual decline in asset value, cumulative O&M credits rarely match depreciation expense. However, even should O&M credit cancel depreciation expense, the private system must still expend the cost for cleaning & inspection and then correction of deficiencies identified.

In discussions with various private systems, County staff have come to understand there is a wide range of tolerance in acceptance of transfer costs. A private system that has incurred major significant repair costs better understands the value of offsetting this risk to the County and will have a different appetite for the transfer expense than a system that has not suffered the expense of major rehabilitation projects. Ultimately, that decision must be made by the leadership of the private entity and the Evaluation Study is a valuable tool to communicate and help to manage expectations.

Importance of Record Drawings

A set of Record Drawings will need to be provided prior to inspection if not on file for the subdivision. Any Record Drawings on file will need to be verified for accuracy by a surveyor or engineer who is licensed in the State of Florida and hired by the property owner. Any inconsistencies with actual current field conditions will need to be revised by the surveyor or engineer at the property owner's expense, before the transfer of ownership and maintenance of utilities takes place.

Inspection Processes

There are two different phases of inspection, the first is cleaning and inspection of the wastewater gravity collection system. If there are any defects such as excessive pipeline sagging, cracked joints or broken pipes, then the inspection and subsequent reports will reveal these defects. Those videos and reports are developed by the private system's contractor and submitted to the County for evaluation and review.

The other phase of inspection is a collaborative effort with County staff and the private system in the field. The County must witness proper operation of system components without touching the private system's valves, manhole lids or appurtenances. In the past, County staff have been blamed for causing damage to infrastructure that was poorly maintained and failed upon use. So now the County only witnesses the operation by the private system or their contractor. As part of this fieldwork, the County will also identify key locations for excavations to reveal construction methods and materials (usually one set per phase of development). The private system will be responsible for making the excavations, coordinating review by County staff and restoring grounds appropriately.

There is no preferred sequence to gravity collection system cleaning and inspection as compared with the County fieldwork inspections, they may proceed independently or together. This discussion is just intended to illustrate that they are separate and distinct activities.

Gravity Sewer Cleaning and Inspection

For the gravity sewer pipes, the inspection and cleaning cost reflects the time for a contractor to inspect the pipes and manholes and develop a report for the County that documents any deficiencies found during the inspection. System inspections are either completed by County staff or are contracted by the County and/or the non-County owned system. No charge is assessed if the system owner pays for a contractor to perform the inspection and prepare a report. However, the County will only waive the fee if the inspection is conducted according to the CCTV Guidelines below and is of acceptable quality.

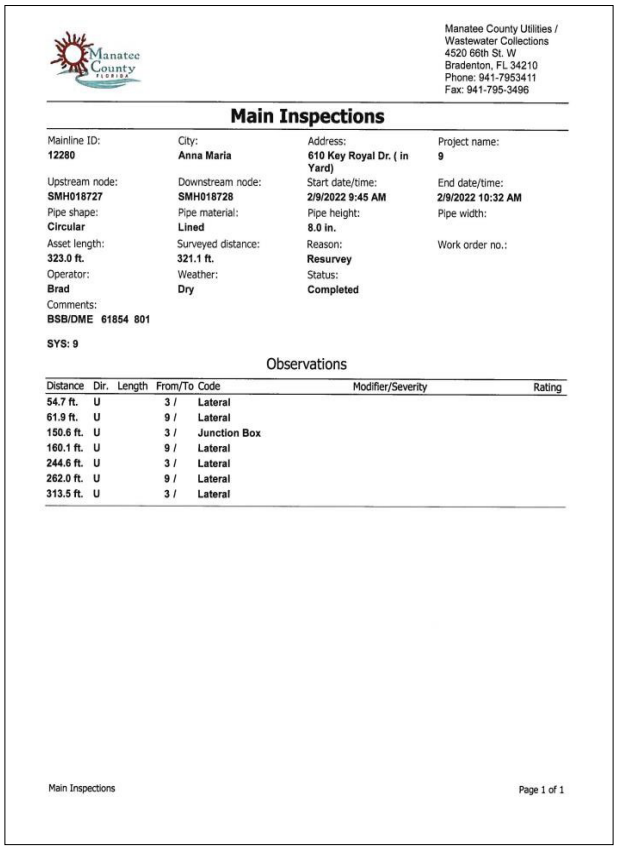
A system owner may choose to have the gravity sewer pipes inspection completed by an outside contractor. (This is the only inspection that can be conducted by an outside entity. All other inspections must be done by County employees.) The contractor will need to comply with the following procedures:

CCTV Guidelines

- A map of the area that was CCTV'd must be provided showing the gravity sewer system with manholes and sewer laterals identified by addresses.
- Each video needs to clearly identify each manhole from starting point to ending point of the video. The manholes should be identified by County GIS number if available or by physical address as supplied in the map that was submitted. (A construction number identification is not to be used.)
- Sewer lines must be cleaned prior to recording (cleaning need not be recorded).
- Flow must be prevented from reaching the CCTV by plugging the upstream manhole, so no flow comes through the sewer main.
- Video footage must start with zero at the starting point and show footage throughout the whole recording to the end of video. (No breaks in recording.)
- Findings need to be documented by segment in a prepared report.
- To determine holding depths within the gravity sewer main, a measuring device that has marks every inch from zero to four must be used and visible in each recording. The measuring device needs to make continual contact with the bottom of the sewer pipe being recorded. (See example below.)
- If depth gets to 1 inch or greater the CCTV camera **must** stop at that location and let the water stabilize for an accurate reading without ripples. (This is because the camera often will push a wake when moving.)
- The camera needs to stop at each joint and service connection and show there are no leaks or defects.
- Every sewer lateral must be CCTV'd from the main to the sewer cleanout (this is the point that will become the homeowner's private sewer line). Most of the time it is from the edge of the right-of-way to the beginning of the private property.
- Any streaming/pouring water must be filmed to determine leaks, breaks, etc.
- A 360° recording of each manhole must be conducted to show condition assessment.

Example of appropriate type of measuring device. Either a tape or ball with clearly indicated increments of depth/height are required.

Example of Proper Manhole-to-Manhole Section Identification



Manatee County Utilities / Wastewater Collections
4520 66th St. W
Bradenton, FL 34210
Phone: 941-7953411
Fax: 941-795-3496

Main Inspections

Mainline ID:	City:	Address:	Project name:
12280	**Anna Maria**	**610 Key Royal Dr. (in Yard)**	**9**
Upstream node:	Downstream node:	Start date/time:	End date/time:
SMH018727	**SMH018728**	**2/9/2022 9:45 AM**	**2/9/2022 10:32 AM**
Pipe shape:	Pipe material:	Pipe height:	Pipe width:
Circular	**Lined**	**8.0 in.**	
Asset length:	Surveyed distance:	Reason:	Work order no.:
323.0 ft.	**321.1 ft.**	**Resurvey**	
Operator:	Weather:	Status:	
Brad	**Dry**	**Completed**	

Comments:
BSB/DME 61854 801

SYS: 9

Observations

Distance	Dir.	Length	From/To	Code	Modifier/Severity	Rating
54.7 ft.	**U**		**3 /**	**Lateral**		
61.9 ft.	**U**		**9 /**	**Lateral**		
150.6 ft.	**U**		**3 /**	**Junction Box**		
160.1 ft.	**U**		**9 /**	**Lateral**		
244.6 ft.	**U**		**3 /**	**Lateral**		
262.0 ft.	**U**		**9 /**	**Lateral**		
313.5 ft.	**U**		**3 /**	**Lateral**		

Main Inspections

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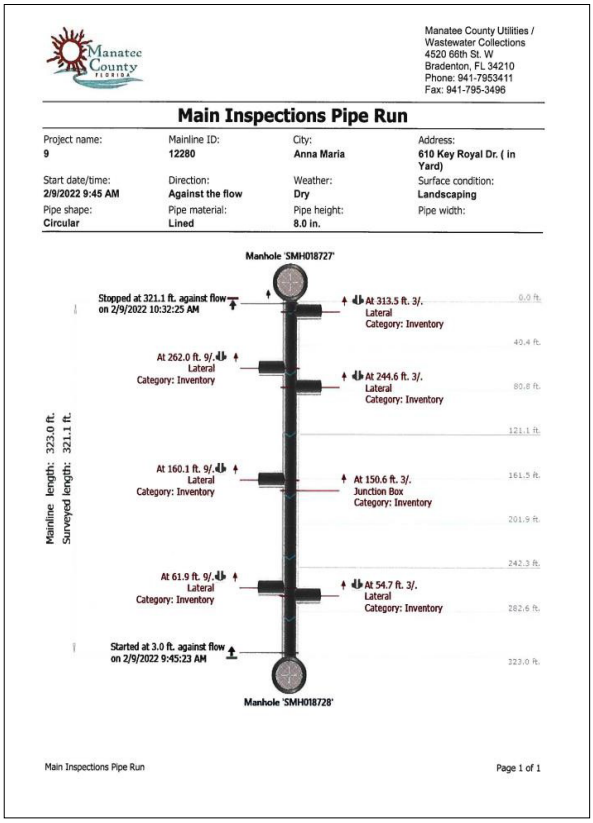

Manatee County Utilities / Wastewater Collections
4520 66th St. W
Bradenton, FL 34210
Phone: 941-7953411
Fax: 941-795-3496

Main Inspections Pipe Run

Project name:	Mainline ID:	City:	Address:
9	**12280**	**Anna Maria**	**610 Key Royal Dr. (in Yard)**
Start date/time:	Direction:	Weather:	Surface condition:
2/9/2022 9:45 AM	**Against the flow**	**Dry**	**Landscaping**
Pipe shape:	Pipe material:	Pipe height:	Pipe width:
Circular	**Lined**	**8.0 in.**	

Main Inspections Pipe Run

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County Field Inspection of Infrastructure

As a part of the transfer process, field inspection of the private system potable water, wastewater and reclaimed infrastructure by County staff is required. The private system (or its representative) may coordinate that work directly with County staff. However, County staff will not operate or manipulate the private system appurtenances. This avoid implication that the County may have caused any damage to the private system before it is transferred. The County's role in this inspection is primarily in a witness capacity.

The intent of the field inspection is to confirm proper operation of system elements including but not limited to: isolation and air release valves; manhole lids; lift station access hatches and level floats, fire hydrants and blowoffs. The County will also request excavations at selected locations to reveal materials and methods such as the type of pipe material used in roadway crossings, the restraint used at fire hydrants and selected water services. It will be the responsibility of the private system's contractor to make those excavations, coordinate County staff inspection and then to appropriately restoe the grounds afterwards.

Cleanout, manhole and portions of force main inspections will be overseen by County Staff according to the procedures outlined below.

Cleanout Inspection Guidelines

The property owner will have a representative present to accompany County staff doing the inspection to

- locate each cleanout;
- ensure each cleanout has a cast iron rim and lid to grade; and
- verify an aluminum tab is marked at curb or edge of pavement.

Manhole Inspection Guidelines

- The property owner will have a representative present to remove the lid of each manhole subject to transfer, so the County can conduct an inspection.

Force Main Inspection Guidelines

- The property owner will have a representative present to:
  - fully shut, and open again, each valve on the force main to show the valve is operational and
  - remove manhole lids or open air release valve (ARV) cabinets so the County can inspect each ARV on the force main. This may include pumping out standing water.
- A tracer wire test must be conducted on the force main.

For the water pipes, the inspection costs reflect the time for County employees to oversee the operation of system valves to make sure they fully close and excavate a water main to determine the pipe/saddle construction for various construction phases or pipe age. The cost assumes a two-person crew with one truck performing inspections.

Prior to the inspection all valve boxes should be cleaned of all dirt and debris and any affected residents are to be notified that the inspection will occur. At the time of inspection, a County representative will accompany and witness the system owner's representative who must perform the following operations:

- fully open, close, and perform dry runs on all valves to ensure they are operational,
- fully open and close all fire hydrants and blow offs,
- dig up one complete same-side water service and one road-crossing service per phase, from the water main to the water meter to inspect the saddle, piping material, and check for a casing under the roadway; location to be of the County's choosing,
- flow test the meters where the same-side and road-crossing services are dug up and inspected,
- for each phase, dig up one main line fitting of the County's choosing to verify size and material, and

perform a tracer wire test on the water line and reclaimed water line (if reclaimed is to be transferred).

Typical Deficiencies

The County has outlined the following items that form the basis of the deficiencies to be considered:

- Potable Water
  - Valves that are not operational.
  - Wheel valves at blow-offs.
  - Hydrants that are not operational.
  - Valve pads and/or valve tabs.
  - Meter boxes not at grade.

- Wastewater
    - Cleanouts missing or not at grade.
    - Telemetry missing or not operational at lift stations. (Must be installed prior to transfer.)
    - Force main valve missing or not operational.
    - Air relief valves missing or not operational
    - Sags or dips in gravity lines that exceed 1-inch will be evaluated on a case-by-case basis. Factors to be considered include, but are not limited to, diameter of pipe, slope of pipe, flow, and existence of an upstream force main.
    - Lift station hatches, doors, pumps, floats or alarms not operational

- Reclaimed Water
    - Missing customer meters. (Master meters are not allowed.)
    - Valves that are not operational.
    - Wheel valves at blow-offs.
    - Hydrants that are not operational.
    - Valve pads and/or valve tabs.
    - Meter boxes not at grade.

Finally, any unexplained ground or roadway subsidence proximate to a manhole, lift station or in alignment with a gravity collection line may warrant additional investigative work at the direction of the County. Such additional investigation will be at the cost of the private system.

Legal Documents

After the Notice of Intent Letter is received, the legal documents will need to be prepared. These include but are not limited to:

- Transfer Agreement
- Bill of Sale
- Easements
- Sketch and Legal Description

Examples of these documents can be provided and should be used by the owner's legal counsel. Once all documents have been provided to the Department, Utilities staff will submit as a package to the County Attorney's Office for review. Upon approval, the documents will be returned to the owner for execution.

Additionally, a resolution or a copy of the minutes of the meeting at which approval was given by the governing body/owner of the non-County owned utility system authorizing the transfer will need to be provided.

Depending on the project, the documents associated with the easements may vary. Owner will work with the Utilities staff to determine what is appropriate for the transfer. Documents should be prepared according to the Description and Sketch Guidelines which can be provided.

Acceptance

When all executed documents have been received, the transfer will be placed on the next available Board of

County Commissioners' consent agenda for approval. Once the Board of County Commissioners has approved the transfer, the documents must be recorded by the non-County owned system owner. Upon recordation, the owner will notify the County and the effective date of the transfer will be the date documents were recorded. Until the effective date, the owner remains responsible for the infrastructure.
The recording of the documents is to be done by the property owner at the owner's expense.

Other Items to be Provided

- Lift Station Information Form. (See Attachment 2.)
- Operation and Maintenance Manual for lift stations needs to be turned over.
- Reports of breaks and repairs.
- At least three sets of keys or access cards to any gated or locked areas in the subdivision which would keep the County from performing maintenance or repair of the subject utilities. The homeowners' association or community representative shall provide at its expense, new access cards or keys to the County whenever the lock or access combinations are changed.

Attachment 1 – Resolution 99-115

RECORDED 6/15/99
PAGE NO. 696
MINUTE BOOK NO. 46

RESOLUTION R-99-115

A RESOLUTION OF MANATEE COUNTY, FLORIDA, ESTABLISHING STANDARDS FOR THE INSTALLATION AND MAINTENANCE OF PUBLICLY-OWNED UTILITIES UNDERLYING PRIVATELY-OWNED LANDS; PROVIDING AN EFFECTIVE DATE.

WHEREAS, as Manatee County continues to grow and urbanize, more requests are being made of Manatee County Government to accept ownership and maintenance of utility lines and appurtenances on and under privately-owned lands; and

WHEREAS, the most common instance of such requests involves new development wherein a developer proposes publicly-owned utilities underlying privately-owned streets; and

WHEREAS, with the increased incidence of such requests, it has become necessary for Manatee County to establish minimum standards and requirements for such arrangements, in an effort to protect the public health, safety and welfare.

NOW, THEREFORE, be it resolved by the Board of Commissioners of Manatee County, Florida, as follows:

1. Manatee County hereby adopts development standards and requirements for public ownership and maintenance of water and sewer utilities lying on or under privately-owned lands. Said standards and requirements are set forth in Exhibit A, which is attached hereto and made a part hereof.

2. The aforesaid standards and requirements shall become effective at 12:01 a.m. on the thirty-first (31st) day following adoption of this Resolution.

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3. Nothing herein shall be construed as requiring Manatee County to accept such a proposed arrangement if the County, in it sole discretion, determines that the proposal is not in the best public interest.

ADOPTED with a quorum present and voting this the 15TH day of JUNE, 1999.

BOARD OF COUNTY COMMISSIONERS
OF MANATEE COUNTY, FLORIDA

By: Stan Stephens
Chairman

ATTEST: R. B. Shore
Clerk of the Circuit Court

By: [illegible]

R-99-115

2536

Schedule "C"
Resolution

14

R99-115

EXHIBIT A

MANATEE COUNTY DEVELOPMENT REQUIREMENTS FOR PUBLIC WORKS DEPARTMENT MAINTENANCE OF WATER AND SEWER UTILITIES WITHIN PRIVATELY OWNED AND MAINTAINED DEVELOPMENTS (POMD)

1) Streets to be owned and maintained by all POMD's shall be open to County maintenance and emergency personnel at all times.

2) Potable water lines, reclaimed water lines, sanitary sewer lines, pump stations, fire hydrants and related appurtenances, to be constructed or installed by a POMD, but owned and operated by the County, shall be within permanent exclusive easements meeting the following criteria:

   a) Street easements shall be the same width as the equivalent right-of-way for streets normally dedicated to the County, but not less than 50'-0" or as otherwise approved by the Board of County Commissioners.

   b) Facilities such as, but not limited to, pump stations and lift stations, shall be located outside street easements and shall be accessible via a 30'-0" wide corridor. The area containing the facility shall extend a minimum of 20'-0" in all directions beyond the edges of the facility. This area, together with the access corridor, will be conveyed to Manatee County by way of a permanent exclusive easement.

   c) Landscaping around lift and pump stations, planted and maintained by a POMD, is allowed within the outer 10'-0" of the 20'-0" perimeter area called for in item b) above. Fencing around lift and pump stations shall be coordinated with the County and shall not serve to unduly interfere with access by County maintenance and emergency personnel.

   d) With the exception of the road paving, concrete curbing, concrete driveways, sidewalks, storm drainage facilities, mailboxes and landscaping and fencing as described in item c) above, no other installation or landscaping shall be placed within the aforementioned easements. Entrance wall foundations and large landscaping owned and maintained by a POMD shall not be installed closer than 10' - 0" or a clear horizontal distance at least equal to the pipe depth below final grade, whichever is larger, from any pipeline owned and operated by Manatee County.

   e) A clear distance of at least 10'-0" shall be maintained between County owned utilities and other utilities such as electric, telephone, gas, cable TV, etc. Additional utility easements may be required to accomplish this.

3) Placement of water, reclaimed water and sewer installations along rear lot lines is prohibited.

4) Maintenance and renewal of all roads, avenues, sidewalks and medians, together with landscaping areas, irrigation systems and retention areas is the sole responsibility of the

POMD. Asphaltic or Portland Cement concrete repairs to roads and driveways, necessitated by maintenance or repair work to County owned underground facilities shall be performed at the expense of the County. Minor settlement is to be expected from these repairs and the POMD is required to hold the County harmless from any liability due to this settlement. Removal and replacement of these patches in order to match decorative pavements and driveways is the sole responsibility of the POMD.

5) The County will pay no fees, royalties, commissions or taxes, however styled, to a POMD for use of easements or ownership of facilities.

6) The above requirements will be included in a written Agreement between the developer of any POMD and Manatee County. This Agreement document shall include legal descriptions for easements. In addition,

   a) the Agreement document will be added to the "Checklist for Final Plat Requirements for a Private Subdivision;" and

   b) the Agreement document shall be recorded in the County's Official Records, simultaneously with the final subdivision plat. The developer shall supply a recorded copy to Manatee County Public Works/Engineering Division and Manatee County Transportation/Land Acquisition Division; and

   c) the Agreement document will be attached as an exhibit to the subdivision's Declaration of Covenants and Conditions and will be referenced in a Notice to Buyers with a notation of the Official Records Book and Page where the recorded copy can be found in the public records of the County.

7) The aforesaid standards shall become effective thirty (30) days after approval and adoption by the Manatee County Board of County Commissioners.

Attachment 2 – Lift Station Information Form

LIFT STATION INFORMATION FORM

PROJECT NAME		**PUMP #1**	
ENGINEER		MAKE:	
CONTRACTOR		MODEL:	
LIFT STATION NAME / RTU		SERIAL#	
STREET ADDRESS		HORSEPOWER:	
CITY		DISCHARGE SIZE:	
GPM		IMPELLER SIZE:	
TDH		VOLTAGE:	
WET WELL SIZE (DIAMETER)		PHASE:	
WET WELL TOP ELEVATION		R.P.M.:	
PUMP GUIDE RAIL MODEL		**PUMP #2**	
WET WELL(PUMP DISCHARGE) PIPE SIZE		MAKE:	
WET WELL(PUMP DISCHARGE) PIPE TYPE		MODEL:	
INFLUENT LINE SIZE		SERIAL#	
INFLUENT LINE ELEVATION		HORSEPOWER:	
WET WELL BOTTOM SLAB ELEVATION		DISCHARGE SIZE:	
GATE VALVE MANUFACTURER		IMPELLER SIZE:	
CHECK VALVE MANUFACTURER		VOLTAGE:	
GATE & CHECK VALVE SIZE		PHASE:	
ROUGH SERVICE(PUMP OUT) SIZE		R.P.M.:	
ELECTRICAL SERVICE VOLTS		**PUMP#3**	***(IF APPLICABLE)***
ELECTRICAL SERVICE PHASE		MAKE:	
MAIN CIRCUIT BREAKER MODEL NO.		MODEL:	
CONTROL CIRCUIT BREAKER MODEL NO.		SERIAL#	
PUMP CIRCUIT BREAKER MODEL NO.		HORSEPOWER:	
MOTOR STARTER MAKE & SIZE		DISCHARGE SIZE:	
ELECTRIC METER NUMBER		IMPELLER SIZE:	
WATER METER NUMBER		VOLTAGE:	
BACKFLOW SERIAL NUMBER		PHASE:	
FORCE MAIN SIZE		R.P.M.:	
FORCE MAIN PIPE TYPE			
FORCE MAIN LENGTH			
DOWNSTREAM LIFT STATION			
FORCE MAIN TERMINATION LOCATION			
FORCEMAIN VALVE LOCATIONS			

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