



Town of Apex, NC Utility Billing (UB) Process Review

Findings and Recommendations Report

Version 1



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Version	Date	Update Reason
Draft 1	June 20, 2025	Draft 1 delivered to the Town for initial review
Version 1	August 18, 2025	Version 1 updated with feedback received from the Town
Final	September 4, 2025	Final version updated with additional feedback received from the Town

1.0 Introduction

This section summarizes the project background, report sections, the work performed in the document's development, the review methodology, and acronyms and terms used.

1.1 Project Background

The Town of Apex (the Town) retained Berry, Dunn, McNeil & Parker (BerryDunn) to conduct a utility billing (UB) process review as it relates to recovering from a recent incident that interrupted operations. The primary scope of the project is to conduct discovery related to current state business processes, simulate the billing process in a test environment, and report key findings from the simulation and review. BerryDunn understands that the Town received feedback from community members expressing concerns about billing inconsistencies following the incident. As a result, resolving this situation has become the Town's main priority as it seeks recommendations on how to move forward.

1.2 Work Performed

The review followed a structured, three-phase approach:

- 1. Phase 0: Project Initiation and Ongoing Project Management.** This phase included initial project planning with the Town project team, the development of a Project Work Plan and Schedule to guide the work, and ongoing status meetings.
- 2. Phase 1: Current State Review.** This phase included the development and issuance of an information request, a stakeholder kickoff presentation, current state review sessions, and a preliminary analysis of the current state. It also included major efforts for simulation testing.
- 3. Phase 2: Analysis and Recommendations.** This phase includes the development of this report and will include an executive summary presentation.

The engagement was initiated in December 2024, with on-site kickoff and discovery sessions occurring in mid-January 2025. Simulation results were delayed from the original timeline due to various factors, including Town resource turnover, system environment access issues, competing priorities among Town staff time, and office closures during scheduled test dates due to inclement weather.

1.3 Review Methodology

To assess billing accuracy, BerryDunn conducted simulated bill runs, compared outcomes to actual historical bills, and identified variances. Due to operational delays, some accounts were billed for extended periods (e.g., over 60 days for Cycle 2 and over 90 days for Cycle 1). In these cases, BerryDunn simulated billing as if accounts had been billed monthly, using average consumption estimates and rate structures aligned with the intended billing periods. Prior delays

prevented the completion of all rechecks needed to confirm missing readings in the meter import file. As a result, assumptions were necessary for affected accounts.

BerryDunn completed the following key activities:

- Conducted current state review sessions in January to understand billing cycles, processes, and tools.
- Reviewed uploaded information provided by Town staff to run a simulation for each cycle and determine whether customers were overbilled.
- Performed simulation reviews using backup data provided by the Town.
- Conducted simulations in a non-production New World environment over a two- to three-month period and compared against actual bills issued after the incident.
- Conducted selection and analysis of a randomized 100-account sample across two billing cycles and shared findings with Town leadership and the council.
- Reviewed independent recalculation of charges using BerryDunn’s simulation tools and applying current rate tables/adjustment procedures during the simulation.
- Reviewed the evaluation of credits, rate accuracy, and account adjustments from Information Technology (IT)-generated files from PDF reports.
- Conducted targeted spot checks on additional accounts to verify billing consistency, including validation of charges, adjustments, and credits.
- Consulted with staff for clarification of account discrepancies and validation of services and charges.

This methodology enabled a comparative view of what was billed versus what would have occurred under standard monthly billing cycles, supporting a review of billing process integrity.

As of May 9, 2025, simulation testing and analysis were completed. Supporting data files were received on April 25; minor delays were caused by formatting issues.

1.4 Definitions and Terms

For purposes of clarity when discussing this project, the following terms and related definitions will be utilized. When appropriate, definitions for project management terms were adopted from the Project Management Institute® (PMI®) Project Management Body of Knowledge® (PMBOK®).

Table 1: Project Terms and Definitions

Project Terms and Definitions	
Term	Definition
AMI	Advanced Metering Infrastructure

Project Terms and Definitions	
Term	Definition
BerryDunn	Berry, Dunn, McNeil & Parker, LLC
ERU	Equivalent Residential Unit
GIS	Geographic Information System
Issue	A point or matter in question or in dispute, a point or matter that is not settled and is under discussion, or a point or matter over which there are opposing views or disagreements
IT	Information Technology
NWS	New World Systems
PDF	Portable Document Format
PM	Project Manager
PMBOK®	Project Management Body of Knowledge®
PMI®	Project Management Institute®
Risk	An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives
Scope	The sum of the products, services, or results to be provided by the project
Town	Town of Apex, NC
UB	Utility Billing

2.0 Current State Summary

This section summarizes the current state of utility services in the Town as of the drafting of this report, including a basic overview of services provided, tools and technologies used, and the resources involved in providing services. This section also outlines key findings from the current state analysis.

The Town's current utility services are provided to a growing customer base using a mix of disparate technology. In some cases, these technologies are supported by changing resources that present unique challenges for continuity and optimal service delivery. The following sub-sections further summarize the current state.

2.1 Current Utility Services

The Town provides a full range of public utility services, including water, sewer, electric, stormwater, refuse, yard waste, and recycling. Billing includes both base and usage charges, with rate structures varying by service type, customer category, and location. Listed below are key attributes related to services. Please refer to the Town's published documentation for usage and volume metrics.

- **Water & Sewer:**
 - Water: Three-tier residential rates and single-tier commercial rates.
 - Sewer charges are based on water usage.
 - Inside and outside Town limits have different rate structures.
- **Stormwater:**
 - Residential rates are based on five tiers determined by impervious surface area (equivalent residential unit [ERU] based).
 - Properties under 400 sq. ft. of impervious surface are exempt.
 - Rates are set and configured by the Stormwater Department.
- **Electric:**
 - Multiple electric rate categories include residential, small/medium/large general service, and time-of-use rates.
 - Includes bilateral peak/off-peak pricing and demand charges.
 - Solar customers receive deductions; some customers qualify for load management credits.
- **Refuse, Yard Waste, Dumpsters, and Recycling:**
 - Flat charges are billed based on account type.

- Some customers are eligible for dumpster services.
- Some customers are charged for the removal of bulk items (e.g., mattresses, box springs) with fees based on the size of loads.
- **Unique Aspects:**
 - Includes complex rate tiers for water and stormwater services.
 - Stormwater fees are based on geographic information system (GIS) analysis of impervious surface.
 - Electric load management credits and solar deductions.
 - Other departments manage meter readings and rate configurations, imports, meter replacements, change-outs, etc.
 - Additional charges may apply (e.g., service initiation fees and miscellaneous refuse fees).

2.2 Current Resources and Roles

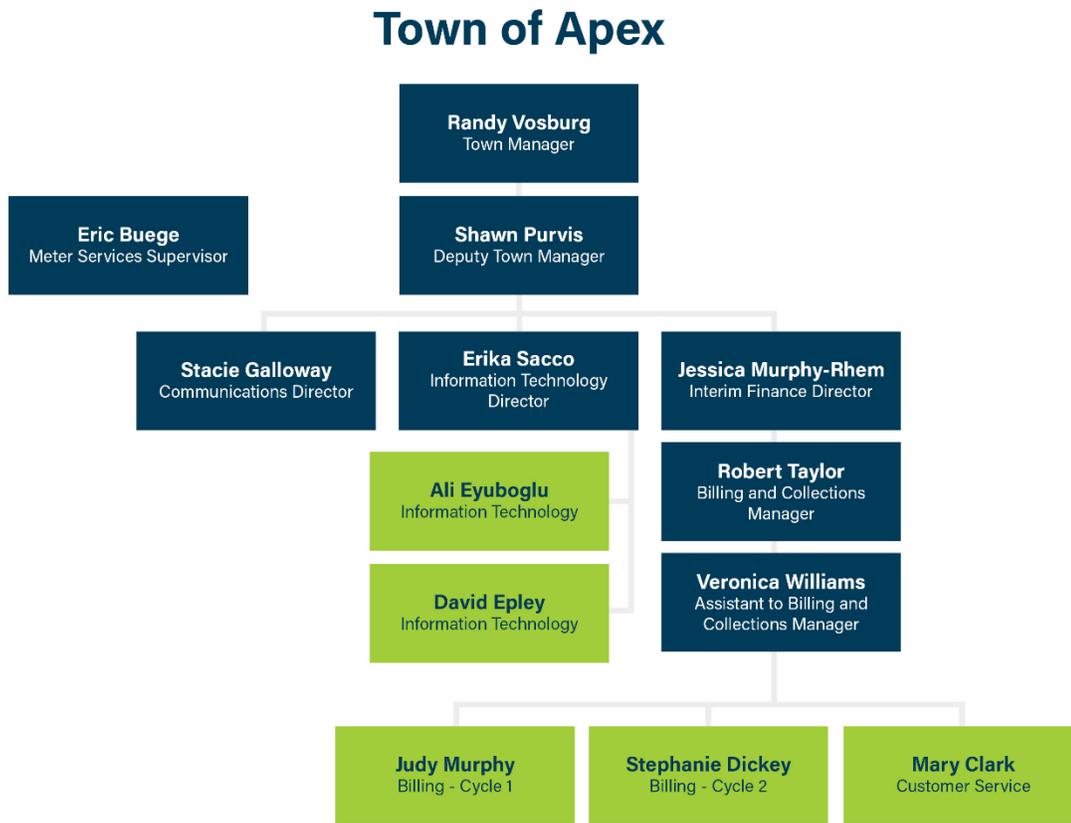
Town staff within the Finance Department are responsible for the UB business process, working closely with staff in other departments as needed to complete both regular and infrequent business processes. Staff are primarily assigned to cycles, as well as customer service, with oversight by the manager and the department director. Key collaborating departments include IT as well as those involved in meter services. Historically, these resources have been considered essential for regularly occurring UB business processes as the processes have frequently required support from IT to complete.

Over the past 12 – 18 months, the Town has experienced turnover among key roles supporting the UB function. This has highlighted areas of close-kept institutional knowledge as well as opportunities for further cross-training and documentation.

With staffing stabilized for UB, it is important to note that some of the team members involved may be new to their roles or may be experiencing workload constraints from the past 12 – 18 months. Additionally, it was reported that staff may feel uncertain about some aspects of their full-time duties or otherwise would benefit from refresher development or training to fulfill their roles.

Current resources and roles are outlined in Figure 1:

Figure 1: Town Resources and Roles



2.3 Current Tools and Technology

The Town currently uses the UB system from Tyler Technologies’ New World Systems (NWS) Division to manage all services, including Tyler Payments. Itron is used for reading except for Elster—which is used for commercial electric readings. NWS has been in place for several years, including prior to its acquisition by Tyler Technologies. The Town reported a desire for satisfaction with the application’s functionality and performance in recent years and an increased self-sufficiency with respect to reports analysis and system administration functions.

The Town is implementing a replacement UB system from Milsoft, with a planned production cutover date in the near future, but that continues to move based on competing priorities. BerryDunn is unfamiliar with the specific activities of the Milsoft implementation; however, it has been reported that most of the same resources involved in this process review project are involved in the implementation. It is critical that the Milsoft implementation follows a structured approach that involves all appropriate analysis, configuration, testing, parallel, and training phases.

2.4 Key Findings

This section presents key findings from BerryDunn’s review of the current environment, including simulation testing.

Table 2: Key Findings

No.	Key Findings
1	The Town paused base charges to Cycle 2 customers billed on August 15, 2024. This decision was made based on customers receiving a two-month billing for cycle two accounts with consumption billed at the new rate. This was intended to offset the rate increase effective July 1 and the possible tier increase due to the two months of usage billed for this period.
2	The Town paused base charges to Cycle 1 customers billed on September 1, 2024. This decision was made based on customers receiving a three-month billing for Cycle one accounts with consumption billed at the new rate. The decision was intended to offset the rate increase effective on July 1 and the possible tier increase due to the three-month usage billed for this period.
3	The Town decided not to add refuse, yard waste, and recycling charges to Cycle 2 customer accounts. This decision was made because Cycle 2 customers were already billed for a two-month consumption period at the newly implemented rate. By not adding these additional refuse-related charges, the Town intended to offset base charges that had not been applied during the one month of missed billings. This approach helped ensure more accurate billing and service recovery while aligning with the post-incident recovery strategy.
4	The Town decided to add refuse, yard waste, and recycling charges to Cycle 1 customer accounts. This decision was made because Cycle one customers were billed for a three-month consumption period at the newly implemented rate. By including these additional refuse-related charges, the Town intended to recover base charges that had not been applied during the two months of missed billings. This approach helped ensure more accurate billing and service cost recovery while aligning with the post-incident recovery strategy.
5	The Town decided to adjust stormwater fees for customers billed in Cycle 1 who received a July 1 bill. The adjustment was applied to one month of billing for Cycle 1 customers billed in July. This represented the first full billing cycle after the incident, covering a shortened billing period. Given the shorter time frame, the Town added a credit to accounts billed for two months in September and later added a credit after realizing some customers received a July 1 bill. The adjustment was added to remove one month over adjusted. Credits were over-credited by \$0.10 to the customer’s advantage.
6	The Town decided to include stormwater fees for customers billed in Cycle 1. These fees were included because Cycle 1 represented the second full billing cycle following the incident and covered a longer, three-month billing period. In contrast, Cycle 2 only included two months of usage. Given the extended time frame and the missed charges during that period, the Town determined it was appropriate to include Cycle 1 stormwater service charges to help ensure accurate and complete billing.
7	Load management credits were not applied to customer bills in Cycle 2. This omission was attributed to a system issue during the first billing cycle following the incident. The Town

No.	Key Findings
	appeared to resolve the problem in subsequent billing periods after receiving inquiries from customers regarding the missing credits.
8	Some load management credits were successfully applied to customer accounts in billing Cycle 1. Following the realization that these credits had not been included in the initial post-incident billing cycle (Cycle 2), the Town took corrective action by helping ensure eligible load management credits were applied during Cycle 1 billing for customers who receive annual credits. The summer month load management credits had not been previously included; however, given the relatively small dollar amounts associated with these credits and the significantly larger base charges that had also been missed during the three-month billing gap, the overall impact of the omitted credits was minimal.
9	Some accounts were not billed on time. Some final/closed accounts were not billed on time, and those accounts have not been automated to add the new customer with an active status, which has contributed to missed billings (catch-up billings). Staff continue to review Cycles 1 and 2 to check credits on accounts and determine whether closed accounts received refunds, if applicable.
10	Resources and staffing constraints have affected recovery efforts. Ongoing operational disruptions and staffing shortages within the Billing & Collections Division have impacted on the pace and continuity of recovery efforts.
11	Concurrent projects and competing priorities have affected recovery and triage review efforts. The simultaneous implementation of advanced metering infrastructure (AMI), the ongoing UB system project, and other active initiatives have significantly diverted staff time and focus from ongoing recovery and triage review efforts. Additionally, the integration of AMI data into the billing system has introduced data inconsistencies, further complicated billing processes and delaying the completion of review activities.
12	Billing process challenges have delayed efforts. Staff currently require more than two weeks to process each UB cycle, primarily due to AMI data inaccuracies and increased workload demands. System errors and unreliable AMI data have further contributed to delays and operational inefficiencies within the billing process.
13	One out of 100 accounts in the sample Cycle 1 and Cycle 2 set were found to be overbilled. One single account appears to have been overbilled by \$19.05 on 145,000 gallons of usage. Accounts were sampled across various account types and services. Post-review investigation indicated the overcharge likely resulted from a leak on the property.
14	Cycle 1 Summary. Based on data exports from IT, the initial review shows a total underbilling for Cycle 1. The total underbilled amount was approximately \$255,000 (about 2.4%).
15	Cycle 2 Summary. Based on data exports from the simulation process, the initial review shows total underbilling for Cycle 2. The underbilled amount was approximately \$45,000 (about 0.4%).

2.5 Summary Findings

BerryDunn delivered an interim presentation of summary findings to the Town leadership on May 13. The following summarizes key aspects of these summary findings:

1. Significant process, technology, and resource challenges contributed to a prolonged and challenged recovery effort that also impacted this review project.
2. In totality, the Town underbilled for the period immediately following the security incident.
3. Based on a detailed review of selected accounts, only one account was found to be overbilled, which was later determined to be due to a leak issue.
4. The Town has significant—and growing—aged receivables, and it is critical that a plan be developed to maintain progress and mitigate the risk of uncollected receivables.

3.0 Recommendations

This section presents key recommendations for the Town to consider and act upon to move forward from the events following the security incident.

On May 13, BerryDunn delivered an interim summary findings presentation to Town leadership. This presentation outlined preliminary recommendations specific to the simulation that included multiple options for continuing potential account-level reviews. Soon after, Town leadership agreed on an approach for account-level reviews that would take place on a request basis within a prescribed window.

With account-level reviews taking place on a request basis within a prescribed window, the Town will be able to implement other actions to further resolve recovery efforts. The following sub-sections present recommended actions for the Town to consider as it moves forward.

3.1 Technology Recommendations

As noted previously, the Town is planning to replace its current UB system. Short-term technology improvements should consider the return on investment—given the limited lifespan of the current system—and the majority of technology-related efforts should focus on the new system’s implementation. To support billing accuracy, efficiency, and long-term sustainability, the Town should prioritize the following technological enhancements for both the current and future system:

1. Improve system speed and performance to reduce delays and support timely billing operations.
2. Conduct regular system maintenance and upgrades to help ensure billing and customer service platforms remain current in non-production (i.e., test and training) environments.
3. Establish clear protocols for system access and troubleshooting, helping ensure authorized personnel can address issues promptly in CityWorks and in the production environment.
4. Consider read-only access to applications when special or unexpected events occur.
5. Help ensure the new UB system implementation follows all industry standards for testing, training, and a smooth cutover (continue to value quality and speed with the implementation).

3.2 Process Recommendations

Streamlining and enhancing internal workflows is essential to helping ensure reliable billing operations and quality customer service. The Town has an opportunity to address many process challenges as part of the replacement UB system implementation—both during the implementation and in the period immediately following production cutover. This period is often referred to as “stabilization” and is a time when similar organizations further reinforce

established processes and help ensure they are providing the intended outcome and value. BerryDunn recommends the Town prioritize the following activities:

1. Focus on business process change opportunities as part of the Milsoft implementation, including testing and training in all key process areas.
2. Initiate a review of key business processes and begin documenting processes that are particularly complex, variable, or not well understood.
3. Work to ensure compliance with legal and regulatory billing guidelines to help prevent errors and maintain public trust.
4. Clearly define and communicate special project plans to align expectations, timelines, and roles across departments.
5. Eliminate unnecessary steps and focus on process improvement to increase consistency, reduce manual errors, and improve service delivery.

3.3 Organizational Recommendations

Strengthening staff support, interdepartmental coordination, and workforce stability will help the Town sustain performance and adapt to future demands. The Town has acted upon many areas for improvement and maintains a goal to continue these efforts. The Town should consider the following activities in its ongoing work:

1. Reprioritize tasks and competing priorities, assigning clear ownership and deadlines to support daily workflow.
2. Provide cross-functional training for UB and metered services staff to increase flexibility and resilience.
3. Offer professional development opportunities to improve staff engagement and support retention.
4. Review policies and ordinances to help ensure alignment with new system configurations and operational realities.

4.0 Next Steps in the Project

This section summarizes the next steps in the project.

An executive summary of this report will be presented to the Town leadership and will conclude this UB Review Project. The information provided is intended to support Town staff, administration, council, and community members in understanding the impacts of the recovery from the Summer 2024 incident and identifying actionable paths forward. BerryDunn has outlined key recommendations across technology, process, and organizational areas to enhance the Town's UB operations and customer service delivery.

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