



# Audit of Stormwater Billing Calculations

September 26, 2022

Mark S. Swann, City Auditor

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# Table of Contents

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<b>Executive Summary .....</b>	<b>1</b>
<b>Objectives and Conclusions .....</b>	<b>2</b>
<b>Audit Results .....</b>	<b>2</b>
<b>Observation A: Stormwater Impervious Area Determination.....</b>	<b>2</b>
<b>Appendix A: Background and Methodology .....</b>	<b>4</b>
Background.....	4
Methodology .....	5
Major Contributors to the Report.....	5
<b>Appendix B: Management’s Response.....</b>	<b>6</b>

# Executive Summary

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## Objective and Scope

The objective of this audit was to determine if property stormwater impervious area determinations and fees are in accordance with City procedures.

The scope of the audit was management operations from October 1, 2018, to June 1, 2020.

## What We Recommend

Management should:

- Develop procedures to ensure all data needed to update the Stormwater Information Management System is received and the system is accurately updated.
- Develop procedures to ensure all impervious area classifications are correct and updated timely.

## Background

Given changes in state and federal stormwater regulations and improvements in stormwater data, the City of Dallas decided to update the Storm Drainage Management fee structure from one based on assumed impervious area to one based on actual impervious area. The City retained Raftelis Financial Consultants, Inc. to design the Stormwater Information Management System to facilitate a new billing process and update parcel characteristic data. The new fee structure along with the Stormwater Information Management System went operational on October 1, 2016.

The goal of the new fee structure was to ensure the financial stability of the Storm Drainage Management program and recover costs more equitably from fee payers. Each change to the monthly fee structure must be approved by City Council ordinance.

Stormwater billing generated the following revenues.

Fiscal Year 2018-19 - \$60,207,073

Fiscal Year 2019-20 - \$61,393,115

## What We Found

No errors in the fee calculations made by the Stormwater Information Management System were noted.

Documentation supporting receipt of property impervious area updates and processing of accurate data was lacking.

## Objectives and Conclusions

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1. Are property stormwater impervious area determinations in accordance with City procedures?

**Generally, no.** Documentation is lacking to validate that all record changes have been received and accurately updated in the Stormwater Information Management System. A sample of 25 property billing classification changes had 13 properties with incorrect impervious area classifications. A separate sample of 25 exempt property billing classification changes had 4 properties that did not have documentation for the parcel fee exemption classification. (See [Observation A](#)).

2. Are property stormwater fees calculated in accordance with City procedures?

**Yes.** The Stormwater Information Management System business rules work as intended, and the proper fee structure is loaded into the system.

## Audit Results

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Both *City Council Resolution 88-3428* and Administrative Directive 4-09, *Internal Control* prescribe policy for the City to establish and maintain an internal control system. The audit observations listed are offered to assist management in fulfilling their internal control responsibilities.

### Observation A: Stormwater Impervious Area Determination

The Stormwater Information Management System is updated annually based on Dallas Central Appraisal District property tax records and bi-annually for property aerial images. System documentation was not provided that showed all records to be updated were received and accurately updated.

Additionally, system changes occur from customer disputes of property billing information. Documentation was not provided to show that all customer inquiries were received and resolved.

A sample of 25 property billing classification changes had 13 properties (52 percent) with incorrect impervious area classifications.

The following is a breakdown of the 13 properties with incorrect impervious area classifications.

- Six properties (46 percent) were classified with no impermeable area, yet the property image showed a house on the property.
- Five properties (38 percent) had an incorrect property classification.
- Two properties (15 percent) had inconsistent classifications between the impervious area classification and the stormwater fees billing classification.

A separate sample of 25 exempt property billing classification changes had 4 properties (16 percent) that lacked support for the parcel fee exemption status.

As a result, there is an increased risk that stormwater fees billed are not correct.

#### Criteria

- ❖ Standards for Internal Control in the Federal Government, *Principle 10 – Design Control Activities*.

Assessed Risk Rating:

**High**

We recommend the **Director of the Department of Dallas Water Utilities**:

**A.1:** Develop and implement procedures to ensure all data needed to update the Stormwater Information Management System is received, and the system is accurately updated.

**A. 2:** Develop and implement procedures to ensure all property impervious area classifications are correct.

## Appendix A: Background and Methodology

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### Background

Storm Drainage Management revenue is collected through the monthly water bills issued by Dallas Water Utilities. The Stormwater Drainage Utility monthly rate is based on measured impervious area for each property. Impervious area is pavement, rooftop, or other hard surfaces that prevents or substantially impedes rain from soaking into the ground. Runoff from impervious area places a higher demand on the City's stormwater sewer system.

The City contracted with Raftelis Financial Consultants, Inc. to develop, administer, and maintain the Stormwater Information Management System, which went operational on October 1, 2016. The Stormwater Information Management System has the following four primary roles.

- 1) Process source and customer data to compute stormwater bills, including annual property updates.
- 2) Provide customer service representatives with a comprehensive way to view and edit stormwater billing data that can be loaded into the billing system.
- 3) Provide the data for the customer to access the Stormwater Fee Finder website.
- 4) Provide management reports for internal analysis or external program checks.

Raftelis Financial Consultants, Inc.'s administrative and maintenance responsibilities are as follows:

#### Stormwater Information Management System Support

- Administer and maintain.
- Troubleshoot.
- Enhance functionality.
- Provide user support.
- Provide customer service support.
- Assist with billing data cleanup effort.

#### Stormwater Information Management System Database Maintenance

- Assist with annual parcel updates.
- Assist with SAP stormwater account data updates.
- Assist with impervious area data updates.
- Develop annual update process and policies.

The Stormwater Information Management System retrieves data from the City's geographic information system to calculate the amount of impervious area on each tax parcel, which is the key piece of information for stormwater fee billing. The Stormwater Information Management System addresses the nuances to calculating the stormwater fee for each customer that are not manageable within either the City's geographic information system or billing system. For each parcel, these nuances may include calculating the number of billing units, rate differentiation by parcel class and/or tier, application of credits or fee incentives, and customer-driven account changes.

Using the Stormwater Information Management System, City staff manages critical information such as property class, exemption status, credit and incentive amount and status, and other relevant data. The Stormwater Information Management System links stored documents for tracking customer correspondence over time and provides the ability to view and describe a property to a customer curious about their fee.

## Methodology

To accomplish our audit objectives, we performed the following steps:

- Interviewed personnel from the Department of Dallas Water Utilities, other city departments, and Raftelis Financial Consultants, Inc.
- Reviewed policies and procedures, relevant City Ordinances, and applicable Administrative Directives.
- Performed various analyses and reviewed documents as needed to support conclusions.
- Considered risk of fraud, waste, and abuse.
- Considered all five internal control components of the *Standards for Internal Control in the Federal Government*.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based upon our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

## Major Contributors to the Report

Frank Mayhew, CIA, CISA, CFE – In-Charge Auditor  
Rory Galter, CPA – Engagement Manager

## Appendix B: Management's Response

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### Memorandum



**DATE:** September 16, 2022  
**TO:** Mark S. Swann – City Auditor  
**SUBJECT:** Response to Audit of Stormwater Billing Calculations

This letter acknowledges the City Manager's Office received the *Audit of Stormwater Billing Calculations* and submitted responses to the recommendations in consultation with the Dallas Water Utilities Department (DWU).

City management appreciates the hard and valuable work of the City Auditor and his staff, and we recognize the importance of robust internal controls and ensuring accurate stormwater billing.

While City management agrees with the auditor's recommendations, we believe the risk ratings for the recommendations should be low due to immaterial financial risk, operational awareness of accounts that need to be reviewed, and the existing corrective action plan to review accounts since the Stormwater Information Management System (SIMS) conversion.

In addition, we believe the inaccuracies noted in the audit do not represent the overall accuracy of stormwater billing accounts. Testing was performed on samples from DWU's Exception Log, which is a log of property changes requiring manual review resulting from annual property updates, impervious area updates, unattached parcels, or classification changes. DWU staff actively reviews the log, which as of the audit, consisted of approximately 5,590 accounts, or 1.9% of total stormwater accounts. Therefore, while the auditor's testing population is effective for identifying accounts with incorrect impervious area classifications or lacking support for the parcel exemption status, the testing results should not be extrapolated across the population of DWU stormwater billing accounts.

To better understand the root cause of the issue, DWU and the City Controller's office researched the accounts the auditor noted to have inaccurate data. To help ensure accurate stormwater billing, DWU transitioned from a fee structure based on assumed to actual impervious area. To implement this change, DWU retained a consultant to design a system, facilitate a new billing process, and update parcel characteristic data in the system based on annual updates from the various county appraisal districts.

The analysis determined that DWU placed some level of confidence in the consultant's internal processes to verify the accuracy of system updates to parcel data, specifically classification. DWU

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Response to Audit of Stormwater Billing Calculations

September 16, 2022

Page 2 of 2

recognizes that its current process to verify the accuracy of the consultant's annual update of property classifications can be strengthened and agrees to implement the auditor's recommendations.

Sincerely,



T.C. Broadnax  
City Manager

C: Genesis D. Gavino, Chief of Staff  
Jack Ireland, Chief Financial Officer  
Kimberly Bizer Tolbert, Deputy City Manager  
Terry Lowery, Director, Dallas Water Utilities

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Assessed Risk Rating	Recommendation	Concurrence and Action Plan	Implementation Date	Follow-Up/ Maturity Date
High	We recommend the <b>Director of the Department of Dallas Water Utilities:</b>			
	<b>A.1:</b> Develop and implement procedures to ensure all data needed to update the Stormwater Information Management System is received and the system is accurately updated.	<b>Agree:</b> While Dallas Water Utilities (DWU) believes Stormwater Information Management System data is generally accurate, DWU agrees to improve processes, including documenting procedures to ensure the data updated in Stormwater Information Management System, including classifications, is accurate.	06/30/2023	06/30/2024
	<b>A.2:</b> Develop and implement procedures to ensure all property impervious area classifications are correct.	<b>Agree:</b> DWU will ensure all property impervious area classifications are correct by implementing recommendation A.1 and developing a review process for classification changes occurring outside of the annual property update.	06/30/2023	06/30/2024