



**CITY OF RICHMOND**

## **Streetlight Division Maintenance (Final Phase)**

**Office of the City Auditor (OCA)**

*An Independent Office of the Richmond City Council*

**Audit Report**

*“Promoting open and accountable City government through independent  
audit services.”*

**Report# OCA 2027-01**

**July 02, 2026**

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## Executive Summary

### Audit Report Issuance Approach

This report is the final phase of the OCA's multi-phase review of the Streetlight Division. [Phase I](#) focused on contract administration and financial management concerns related to a streetlight maintenance contract that was partly used to perform a citywide streetlight inventory count. This phase focused on the efficiency, effectiveness, and maintenance of streetlights.

### Background

The Electric Utility (Streetlight Division) purchases electricity from Dominion Energy and distributes it to an estimated 37,000 streetlights across the municipal system. It installs, maintains, and operates the streetlight infrastructure, including five substations that serve most of the City. The Streetlight Division also contracts with Dominion Energy to operate and maintain approximately 6,000 additional streetlights located in the southwest area of Richmond. The primary goal of the Streetlight Division is to promote safe streets and improve visibility for vehicle and pedestrian traffic. The Streetlight Division uses a Geographic Information System (GIS) to track and map the location of City-owned streetlights and is the official inventory record.

### Overall Conclusion

The Streetlight Division provides an important service that supports visibility, mobility, and public safety throughout the City. Many routine streetlight repairs appeared to be completed within the Division's general repair timeframe, and most sampled streetlights were on during OCA site visits. In addition, the City has begun taking steps to evaluate existing streetlight inventory data and develop a path toward finalizing and integrating the streetlight inventory into the City's mapping system.

However, although the City invested approximately \$3.63 million in streetlight inventory project intended to improve streetlight asset information, it does not yet have complete and accurate information to adequately support management and planning for the streetlight system. Issues related to project planning, contract management, and timely review and validation of submitted data contributed to incomplete and inconsistent streetlight inventory data. As a result, the City has not finalized and integrated a complete streetlight inventory into GIS.

Without a complete and accurate streetlight inventory, the City has a reduced ability to reliably identify which assets it owns, reconcile electricity billings, evaluate maintenance needs, identify lighting gaps, and plan for future replacement and modernization. The City also does not currently have centralized repair tracking, which reduces management's ability to monitor workload, assess



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backlogs, measure repair timeliness, and develop meaningful performance goals. Strengthening the City's streetlight management framework by finalizing the inventory, reconciling billing accounts, centralizing repair tracking, and establishing reliable performance information would improve operational decision-making, financial oversight, and long-term infrastructure planning.

### Summary of Opportunities for Improvement

#### Finding 1

The City's streetlight inventory is incomplete and inaccurate, which impairs its ability to effectively manage and plan for these assets. Significant discrepancies exist between the field asset survey and existing GIS datasets, including missing and miscoded assets, incomplete ownership information, and inconsistent data structures. These issues have prevented the inventory from being finalized and integrated into GIS, reducing the City's ability to track assets, plan maintenance, identify lighting gaps, and reconcile billing.

#### Finding 2

The City cannot readily reconcile streetlight electric bills because the streetlight inventory is incomplete and inaccurate, and billing is spread across numerous accounts. The large number of Dominion Energy accounts, along with inconsistent naming conventions, makes it difficult to match billed lights to actual assets. These conditions limit the City's ability to identify billing discrepancies and maintain effective oversight of streetlight-related utility costs.

#### Finding 3

The City does not have a centralized system for tracking streetlight repair requests, resulting in dispersed data across multiple tools. Without a unified process, management cannot easily determine the status or age of requests, assess repair timeframes, or identify backlogs. These limitations reduce visibility into workload and hinder effective oversight and planning of maintenance activities.

### Summary of Recommendations and Management Response

The OCA issued 9 recommendations, and management has concurred with 9. The OCA will assess the implementation status of all recommendations as part of its Periodic Open Recommendation Follow-Up Review. A detailed listing of recommendations and management responses are included in Appendix C.



## Background

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### Streetlight Overview

The primary goal of the Electric Utility (Streetlight Division) is to promote safe streets and improve visibility for vehicle and pedestrian traffic. It purchases electricity from Dominion Energy and distributes it to an estimated 37,000 streetlights across the municipal system. It also installs, maintains, and operates the streetlight infrastructure, which includes five substations that serve most of the City. The Streetlight Division also contracts with Dominion Energy to operate and maintain approximately 6,000 additional streetlights located in the southwest area of Richmond. In fiscal years 2024 and 2025, approximately \$11 million annually was allocated for streetlights.

A streetlight is a fixed outdoor light mounted on a pole and installed along roads, sidewalks, or public areas to improve visibility and safety during nighttime or low-light conditions. Effective street lighting supports public safety throughout the City by enhancing driver and pedestrian visibility and helping to reduce crime. According to the U.S. Department of Transportation Federal Highway Administration, 76% of pedestrian fatalities occur at night.<sup>1</sup>

Maintaining an accurate streetlight inventory is important because the City needs to know where streetlights are located to effectively maintain them, respond to outages, plan improvements, and monitor the completeness of the streetlight system. The Streetlight Division uses a Geographic Information System (GIS) to track and map the location of City-owned streetlights and is the official inventory record.

As noted in the Streetlight Maintenance Division (Phase I) audit report,<sup>2</sup> the City hired a contractor to complete a field asset survey to inventory streetlights and collect key asset details such as location, pole type, and ownership so the City can update the streetlight inventory.

### Staffing

In January 2022, the Department of Public Utilities began transferring operational responsibility for streetlight functions to the Department of Public Works. These functions include managing active and vacant positions, maintenance activities, and contract management. The Streetlight Division will fully transition to the Department of Public Works once a required City Charter change is completed. As of the organizational chart dated April 29, 2026, the Streetlight Division had 24 positions, including four vacancies.

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<sup>1</sup> [https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_7/nighttime\\_visibility.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_7/nighttime_visibility.cfm)

<sup>2</sup> [OCA 2025-06 Streetlight Division Maintenance \(Phase I\) -12.3.24.pdf](#)



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### Types of Streetlights

According to Streetlight Division management, the City has 28 different types of streetlights. These streetlights are typically installed on wooden or metal poles, as shown in **Figure 1** below.

**Figure 1: Examples of Streetlights**



Source: OCA photographs of LED cobra head, Granville-style, and Hanover-style streetlights.

## Findings and Recommendations

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### **Finding 1: The City’s streetlight inventory is incomplete and inaccurate, which impairs its ability to effectively manage and plan for these assets.**

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City Code Section 28-837<sup>3</sup> requires the Department Director<sup>4</sup> to maintain records that document all electric wiring, poles, streetlights, and other related facilities owned, rented, maintained, or used by the electric utility. However, despite a significant financial investment, the City currently does not have a complete and accurate inventory of the streetlights it owns and operates.

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<sup>3</sup> City Code Sec. 28-837, “Records of facilities,” accessed May 19, 2026, [https://library.municode.com/va/richmond/codes/code\\_of\\_ordinances?nodeId=CH28UT\\_ARTVIII\\_LUT\\_DIV1GE\\_S28-837REFA](https://library.municode.com/va/richmond/codes/code_of_ordinances?nodeId=CH28UT_ARTVIII_LUT_DIV1GE_S28-837REFA)

<sup>4</sup> Per City Code, the Streetlight Division is currently under the Department of Public Utilities. However, as noted in the background, it is operationally under the Department of Public Works and will be fully transferred once the Charter change is completed.



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The Streetlight Division uses GIS to track and map City-owned streetlights. Management estimated that the GIS inventory was approximately 80% complete. As of the February 25, 2025, data received and reviewed by the OCA, GIS records included approximately 31,000 streetlights.

Complete, accurate, and reliable information is essential for effective management and oversight. According to the Government Accountability Office (GAO),<sup>5</sup> reliable data supports management's ability to make informed decisions, helps personnel carry out their responsibilities, and enables oversight bodies to provide effective oversight. For infrastructure assets, a complete and accurate inventory is a critical building block for effective asset management because it supports maintenance planning, replacement planning, budgeting, risk assessment, and operational decision-making.<sup>6</sup>

A complete and reliable inventory enables management to:

- Identify, track, and safeguard streetlight assets,
- Plan for maintenance, repairs, and replacements,
- Develop adequate budgets and forecasts,
- Determine ownership and maintenance responsibility,
- Reconcile electricity billings for accuracy,
- Identify lighting gaps in the City and prioritize improvements, and
- Communicate operational needs to decision-makers.

This is also important because residents have expressed concerns about streetlighting quality. In the 2026 National Community Survey, 59% of Richmond residents rated the quality of streetlighting as fair or poor, while 41% rated it as excellent or good.

### **1A. The field asset survey data is incomplete with missing and miscoded assets affecting reliability.**

As noted in the Streetlight Maintenance Division (Phase I) audit report,<sup>7</sup> the City hired a contractor to complete a field asset survey to inventory streetlights and collect key asset details such as location, pole type, and ownership so the City can update the streetlight inventory. Between January 2021 and February 2025, the contractor billed the City approximately \$3.63

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<sup>5</sup> GAO-25-107721, "Standards for Internal Control in Federal Government," <https://www.gao.gov/assets/gao-25-107721.pdf>, pages 63,83-86

<sup>6</sup> IBM. (n.d.). *Infrastructure asset management*. <https://www.ibm.com/think/topics/infrastructure-asset-management>, accessed on May 2, 2026

<sup>7</sup> [OCA 2025-06 Streetlight Division Maintenance \(Phase I\) -12.3.24.pdf](#)



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million for labor, equipment, and vehicles.<sup>8</sup> However, despite this investment, the City still does not have a finalized, complete, and accurate streetlight inventory.

According to Streetlight Division management, the contractor began the survey in the southwest portion of the City, then moved to areas north of the James River. The OCA received the survey results in these same two segments. When the field asset survey data was compared to the City's GIS data and management's estimated number of City owned streetlights, significant discrepancies were identified.

As shown in **Table 1**, the field asset survey captured fewer streetlights than the GIS dataset and fell well below management's estimate of the total number of City-owned streetlights. These differences in the data ranged from 4,786 to 10,851 streetlights. However, based on data integrity issues noted in this report, the OCA cannot conclude on the accuracy of the inventory datasets.

**Table 1: Comparison of GIS Data, Field Asset Survey Results, and Estimated Streetlight Counts for City-owned Streetlights**

Source	Number of Lights
Streetlight Division Estimate	37,000
GIS Data Streetlight Count	30,935 <sup>9</sup>
Field Asset Survey Data	26,149 <sup>10</sup>

Source: Created by OCA using the provided field asset survey data, GIS data and management interviews.

Streetlight Division management believes the discrepancies are primarily related to data collected in areas south of the James River. They explained that the boundary between City-owned and Dominion Energy-owned streetlights in the southwest is near one of the City's substations, which may have led the contractor to classify some City-owned lights as Dominion Energy assets. Management also noted that the contractor was expected to return to this area to determine the cause of the discrepancies and correct the data; however, this follow-up work did not occur before the City terminated the contract.

The OCA plotted the GIS data and the unverified<sup>11</sup> field asset survey data and compared the results. This comparison generally supports management's explanation of the discrepancies in the streetlight data. The OCA noted:

<sup>8</sup> The OCA's Phase I audit found that the contract was not properly managed by the City and identified approximately \$1.2 million in questionable expenditures from the total billed.

<sup>9</sup> Figure includes all active streetlights from the GIS data as of February 25, 2025.

<sup>10</sup> Figure includes all the streetlights from north of the river and those noted as city owned lights included in the southwest portion data.

<sup>11</sup> As of report issuance, Streetlight Division management have not reviewed or verified the field asset survey data.



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- The field asset survey and GIS data were consistent for the areas north of the James River, making it reasonable to conclude that the majority of the data discrepancies were unlikely to have occurred there.
- The field asset survey data reflected significantly fewer City-owned streetlights than the GIS data for areas south of the James River, suggesting that discrepancies likely occurred in that area, including miscoded ownership and missing streetlights that were not inventoried or counted.

In addition to missing streetlights and misclassified ownership, the OCA identified several other factors that may have contributed to the discrepancies:

- The GIS data was not consistently updated for streetlight removals or additions. The OCA judgmentally selected 36<sup>12</sup> streets and physically counted the number of streetlights present during the site visits. The auditors' physical counts differed from the number of streetlights in the GIS data for approximately 83% (30/36) of the streets. Also, the field asset survey data contained numerous entries that poles and/or lamps were not at identified locations.
- The field asset survey listed 1,824 streetlights south of the James River without an identified owner. Even if all were City-owned, a gap would still remain when compared to the GIS data as of February 25, 2025.
- Some differences may be due to timing between the field asset survey and GIS updates. However, the GIS dataset remained steady at approximately 31,000 streetlights between June 2023 and February 2025, indicating that timing alone does not account for the discrepancy.

Even after considering these explanations, a significant discrepancy remains. As previously noted, management estimated that the City owns 37,000 streetlights. The field asset survey identified 26,149 City-owned streetlights, leaving an unexplained difference, as shown in **Table 1**. While some discrepancies appear to relate to the contractor's classification of assets, the issues remained unresolved because the City did not review and validate the field asset survey data while the contract was active.

As described in OCA's Streetlight Maintenance Division Phase I audit, the OCA previously found significant contract administration and financial management concerns related to the

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<sup>12</sup> A total of 45 streets were visited including 36 selected from the GIS dataset and nine selected from the field asset survey dataset for the southwest portion of the City where the Dominion Energy owned lights located.



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streetlight contract. In this review, OCA identified a related issue: field asset survey data received by the City was not reviewed and validated in a timely manner to identify and correct data issues. Management did not review or verify the data as it was received. Streetlight Division management stated that they intended to perform ongoing reviews but lacked the necessary GIS tools to validate the information.

As a result, management deferred the review until the end of the project, even though the project continued for more than four years. The Streetlight Division must now address any remaining data gaps, errors, or inconsistencies and may incur additional costs to correct issues that could have been addressed during the contract period through adequate planning, timely review, and ongoing monitoring.

### **1B. Data quality issues identified in both the field asset survey and the existing GIS datasets reduced the reliability of the information.**

The OCA reviewed both the GIS and field asset survey datasets and identified several issues that affect the consistency and reliability of the information. Several inventory fields were formatted inconsistently across the two datasets, resulting in the same information being captured differently. For example:

- The GIS dataset recorded full descriptions of “Light Source” and “System” types, while the field asset survey used abbreviations (*e.g., High Pressure Sodium vs. HPS*)
- Fields representing the same attributes were labeled differently in each dataset (*e.g., luminaire fixture vs. fixture; lamp wattage vs. wattage; luminaire type vs. type*).
- In GIS, poles and luminaires are tracked separately; however, the field asset survey captured this information together for streetlights located in the southwest portion of the City.

The OCA also identified data quality issues in both datasets, including blank fields, default installation dates, and duplicate lamp numbers. In addition, different information was captured for streetlights located south of the James River than for streetlights located north of the river.

These issues make it more difficult for the City to reconcile the field asset survey data to GIS, determine which records are complete and accurate, and integrate the survey results into the City’s streetlight inventory. Without standardized and reliable data, the City will need to perform additional cleanup, validation, and reconciliation before the information can be used to effectively manage the streetlights.



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### 1C. The streetlight inventory has not been finalized and integrated into GIS.

As of April 23, 2026, the streetlight inventory had not been finalized and integrated into the GIS layer. However, the City has begun taking steps to evaluate existing GIS and streetlight inventory data and develop a path toward finalizing and integrating the streetlight inventory into GIS. On March 23, 2026,<sup>13</sup> the Streetlight Division enlisted the services of one of the City's existing contractors to:

- evaluate the existing GIS data and the field asset data collected by the third-party vendor,
- develop a model to unify both datasets,
- create a framework for converting and integrating the data into GIS, and
- prepare a budget and timeframe for data conversion and integration.

These tasks will be completed as Phase I of the project, with an anticipated completion date of June 19, 2026, at a cost of \$27,700. Upon completion of Phase I, the contractor is expected to proceed with the actual data conversion and integration, which will occur in Phase II. The costs and anticipated completion timeframe for Phase II are currently unknown and are expected to be developed in Phase I.

The contractor noted in its scope of work that, based upon an initial review of the City's GIS data and the field asset survey data, there were variations in the schema, content and spatial accuracy. The contractor noted that these variations suggest schema refinements are needed for consistent asset representation. The contractor also noted that several attributes in the field asset survey data were entered without domain controls, which led to inconsistent values, while other values, such as pole length and height, were sparsely populated. The OCA's observations in **Finding 1B** align with the contractor's initial assessment.

Overall, the OCA found that the lack of a structured project plan, adequate contract management, and timely review and validation of submitted data contributed to incomplete and inconsistent streetlight inventory data. As a result, the City has not yet finalized and integrated a complete and accurate streetlight inventory into GIS.

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<sup>13</sup> The Streetlight Division management obtained a proposal from a contractor in July 2025 to incorporate field asset survey data into GIS. However, management indicated that found they could not use that contract for this project.



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### Recommendations

#### Recommendation 1

High Priority

We recommend that the Director of Public Works identify and resolve the data quality issues and gaps within the streetlight inventory, finalize the asset information, and upload the completed inventory into the system of record.

#### Recommendation 2

High Priority

We recommend that the Director of Public Works develop and implement ongoing monitoring, data governance, and quality-control processes to maintain the accuracy and reliability of the streetlight inventory after it is integrated into GIS.

These processes should:

- define staff roles, responsibilities, and training requirements for maintaining data accuracy;
- include periodic reconciliations between GIS, field activities, contractor work, and maintenance records, and billing data;
- require timely updates to the inventory whenever streetlights are installed, removed, converted to LED, or modified;
- incorporate automated and manual data-validation checks to identify missing, outdated, or inconsistent information; and
- include routine management review to ensure the inventory remains complete, current, and suitable for operational, financial, and planning purposes.

#### Recommendation 3

High Priority

We recommend that the Director of Public Works develop and implement a project planning and monitoring process for significant City projects, especially those involving contractor deliverables, system data, or asset information.

At a minimum, the process should require management to:

- define project objectives, deliverables, data standards, roles, and acceptance criteria before work begins;



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- identify the tools, access, staffing, and training needed to review and validate deliverables;
- establish milestone reviews to assess progress, data quality, and unresolved issues before the project advances;
- document management's review and acceptance of key deliverables; and
- ensure issues are corrected while the contract, project, or vendor engagement is still active.

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### **Finding 2: The City cannot readily reconcile streetlight electric bills because the streetlight inventory is incomplete and inaccurate, and billing is spread across numerous accounts.**

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The GAO<sup>14</sup> emphasizes that management should implement control activities to ensure transactions are properly authorized, accurately recorded, supported with adequate documentation, and protected through controls designed to prevent improper payments. The GAO also emphasizes the importance of ongoing monitoring activities, such as reconciliations, trend analysis, data analytics, to identify errors or improper payments. These principles apply to utility billing because electricity invoices should be reviewed and reconciled before payment to help ensure charges are valid, supported, and consistent with applicable rates.

The City partners with the Virginia Energy Purchasing Governmental Association (VEPGA) to negotiate electricity contracts with Dominion Energy. The City pays Dominion Energy monthly costs to power streetlights and also contracts with Dominion Energy to operate and maintain approximately 6,000 streetlights in the southwest area of Richmond. Between fiscal years 2023 and 2025, the City paid Dominion Energy an average of approximately \$3.19 million annually for accounts associated with the streetlights.<sup>15</sup>

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<sup>14</sup> GAO-25-107721, "Standards for Internal Control in Federal Government," <https://www.gao.gov/assets/gao-25-107721.pdf>, pages 63-67

<sup>15</sup> The OCA used Dominion Energy billed amounts extracted from the EnergyCap system. The Dominion Energy bills are uploaded into the City's EnergyCap system, which is a utility bill and energy management system maintained by the Office of Sustainability. Per the Streetlight Division management, some of the accounts in EnergyCap are not only tied to streetlights. Therefore, the total costs specific to streetlights may be higher or lower than the amount noted.



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The City receives Electronic Data Interchange (EDI) billings from Dominion Energy for City electric accounts, including streetlights. The bills are imported into the Department of Public Utilities' Customer Information System, and a program adds the charges to the applicable City agency utility bills. Payments are electronically remitted to Dominion Energy twice a month for all bills received.

However, the City does not currently have the inventory, account structure, or data needed to readily reconcile Dominion Energy streetlight billings for accuracy. Dominion Energy's GIS layer includes 41 different streetlight accounts. Due to the naming conventions used for these accounts, the City cannot readily determine which bills correspond to specific streetlights. For example, one account is named "M0042, Richmond, VA 23219" with 3 lights while another is named "Richmond, Va 23219" with 695 lights. Dominion Energy representatives noted that most localities have five to six accounts and due to the large number of City accounts staff must manually research account details when repair or change requests are submitted. Dominion Energy indicated that consolidating accounts and transitioning to GIS-based billing would support real-time updates for outages, repairs, and changes in lighting assets.

In addition, as discussed in **Finding 1**, the City does not have a complete and accurate streetlight inventory, and the total number of streetlights is unknown. As a result, the City cannot reliably verify whether streetlight charges are accurate, complete, and associated with the correct assets.

Streetlight billing is based on two types of circuits: flat-rate and metered. Flat-rate billing charges a fixed monthly amount for each streetlight based on factors such as lamp type, wattage, and assumed energy usage. Metered billing charges the City for the actual electricity consumed, as recorded by meters. Based on the City's GIS data as of February 25, 2025, approximately 79% of City-owned streetlights are powered through one of the City's five substations, 12% are billed at a flat monthly rate, and the remaining 9% are metered.

Both flat rate and metered billing create risks when the City does not have a complete and accurate streetlight inventory. Flat-rate lights carry a higher risk of billing errors because Dominion Energy must be notified whenever a streetlight is decommissioned, converted, or upgraded, such as when a high-pressure sodium fixture is replaced with an LED fixture. If these changes are not reported, the City may continue to be billed at the prior rate, which can result in overcharges. Metered circuits also present risks because the City cannot readily confirm whether the meters are associated with City-owned lights, billed on the correct rate schedules, and the same light(s) are not billed across multiple accounts. Without accurate and complete inventory information, the City cannot verify that flat-rate or metered charges align with the actual assets in service, increasing the likelihood of inaccurate billing and improper payments.



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Because of these limitations, the OCA was unable to perform a comprehensive analysis to verify whether the City is being accurately billed for streetlights at the appropriate contract rates.

However, OCA identified several billing-related issues:

- The City began converting its streetlights to more energy efficient LED lights starting with a pilot program in 2018. Some of the City's streetlights are billed at a flat rate based on the type of light and lumens. When a flat-rate light is converted from HPS to LED, the City must notify Dominion Energy of the change. The OCA identified at least 95 LED-converted lights that were not reported to Dominion Energy, even though the conversion potentially affects billing rates.
- For streetlights billed under one of the rate schedules, there is no LED rate category, and updates are necessary to ensure proper billing. According to the Operations Manager, staff have not notified Dominion Energy about the flat-rate area conversions because they are still determining the correct accounts and identifying what should be included, such as circuits or individual light loads. They stated that they are currently working with Dominion Energy on these issues as well as the VEPGA schedules.
- Dominion Energy identified seventeen streetlights billed under an incorrect rate category across multiple years, resulting in a total credit of approximately \$1,900 to the City.

Although the OCA could not perform a comprehensive billing analysis, we conducted a high-level analysis to determine whether energy usage at three of the City-owned substations decreased following the conversion to LED lights. The OCA's review found that energy consumption for these three substations has decreased as expected with the conversion to LED lighting.

Overall, the Streetlight Division relied on Dominion Energy's meter accuracy and did not have the information, structure, or data needed to perform an effective reconciliation. Without a systematic, risk-based process to review and reconcile streetlight billings, the City faces an ongoing risk of inaccurate charges and reduced oversight of utility expenditures.

The City uses EnergyCAP, a utility bill and energy management system. Once streetlight accounts are reconciled and linked to a complete inventory, EnergyCAP could support monthly monitoring by tracking charges, identifying unusual consumption patterns, and flagging potential billing errors. However, EnergyCAP cannot be used effectively for streetlight billing reconciliation until the City finalizes the inventory and aligns streetlight assets to the correct billing accounts.



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Before the City can create an effective reconciliation process, consolidate accounts, or evaluate the use of GIS-based billing by Dominion Energy, it must first finalize a complete and accurate streetlight inventory. This inventory should serve as the foundation for linking assets to the correct accounts, validating billing rates, reporting lighting changes to Dominion Energy, and determining whether GIS-based billing is an appropriate long-term solution for improving accuracy and efficiency.

### Recommendations

#### Recommendation 4

High Priority

We recommend that the Director of Public Works develop and implement a structured plan to reconcile and consolidate all streetlight-related Dominion Energy billing accounts.

The plan should include:

- identifying all existing accounts and standardizing account naming conventions;
- linking each account to a verified and finalized streetlight inventory;
- confirming ownership, billing type, and applicable rate schedules for each account;
- merging, eliminating, or correcting accounts as necessary to ensure accuracy and reduce complexity; and
- evaluating the feasibility of transitioning to Dominion Energy's GIS-based billing system once the inventory and accounts are accurate and aligned.

#### Recommendation 5

High Priority

We recommend that the Director of Public Works develop and implement a documented, risk-based reconciliation process to ensure the accuracy of Dominion Energy streetlight billing.

This process should:

- identify, research, and resolve known billing exceptions identified during the audit, including unreported LED conversions, incorrect rate categories, and accounts requiring rate schedule updates.



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- prioritize higher-risk billing types, including flat-rate circuits, LED conversions, and accounts with historical errors;
- include procedures for verifying rate categories, confirming LED upgrades have been reported, and validating meter associations;
- define roles, responsibilities, and review frequencies; and
- incorporate routine trend analysis to identify unusual charges or consumption patterns.

### Recommendation 6

High Priority

We recommend that the Director of Public Works, in coordination with the Director of Sustainability, reconcile and correct all streetlight-related accounts within EnergyCAP and establish controls to maintain data accuracy. Efforts should include:

- aligning EnergyCAP account records with the finalized inventory and consolidated Dominion Energy accounts;
- establishing internal validation controls to ensure data remains accurate; and
- incorporating EnergyCAP into the City's routine reconciliation process to monitor energy use, identify billing anomalies, and support oversight of utility expenditures.

### **Finding 3: The Division's decentralized tracking process reduces visibility into workload and impairs its ability to assess performance and develop meaningful performance goals and metrics.**

The Streetlight Division is responsible for maintaining the City's streetlights, poles, five electric distribution substations, and overhead and underground wiring. The Division conducts three categories of repairs, with timeframe goals ranging from 45 days to 24 months. These timeframes include the time needed for inspections, assessments, and repairs, as shown in **Table 2** below.



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**Table 2: Repair Descriptions and Repair Timeframe Goals**

Repair Type	Repair Description	Repair Time
General	Issues such as a single streetlight outage, flickering lights, or broken fixtures.	45 to 65 days
Minor	Repairs addressing issues such as damaged pole bases, missing anchor bolts, or malfunctioning luminaires.	90 to 180 days
Major	Significant repairs involving infrastructure damage, pole strikes, or exposed cables or wiring.	12 to 24 months

Source: Created by OCA using information from RVA311.

Residents can submit repair requests via RVA311, phone calls, or emails. Repair requests are also received from the Richmond Police Department, Department of Public Utilities dispatch, and Streetlight Division staff when they observe outages while working. However, the Streetlight Division does not have one centralized system that tracks repair requests from initial report through completion details.

Instead, repair requests and completion information are tracked through multiple systems and records, including:

- **RVA311**, the City’s customer service and response portal used by residents and City employees to report problems or initiate service requests;
- **Internal Excel Spreadsheets** created by staff to track monthly accomplishments, including completed streetlight repairs compiled from the paper service orders;
- **A Damaged Pole Spreadsheet** used to track repair requests for damaged poles, such as pole replacements. These requests are closed out in RVA311 and tracked internally on this spreadsheet.
- **Paper Service Orders** used by Streetlight staff to document service request dates, how the request was reported, repair location, description, completion date, assigned staff, Council District, and asset details such as lamp and pole numbers; and
- **Dominion Energy Systems**, which are used to track repair requests and completion details for streetlights and poles owned and maintained by Dominion Energy. When the City receives a service request, staff research the asset to determine ownership. If the



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streetlight or pole is owned and maintained by Dominion Energy, the request is closed in RVA311 and forwarded to Dominion Energy for repair.

The OCA reviewed and analyzed information from these sources and identified data limitations that affect the completeness, consistency, and reliability of repair information.

- **RVA311 does not always reflect the full status of work activities.** Some requests are closed in RVA311 before the work is completed and then moved to other systems or spreadsheets for tracking. For example, damaged-pole requests are closed in RVA311 and tracked internally, while requests for Dominion-owned streetlights are closed and forwarded to Dominion Energy for repair. In addition, the completion date entered in RVA311 does not always match the actual repair date. If tickets are not closed in a timely manner, the system may overstate repair times. If requests are not properly closed, the system may overstate the number of outstanding repair requests.
- **The internal Excel spreadsheets do not provide a complete view of open and completed work.** The spreadsheets capture various types of completed work each month. The OCA manually cleaned the data to isolate streetlight repairs applicable to the Streetlight Division's repair timeframe goals. However, open requests are not centrally tracked, so the OCA could not determine how many requests are open and how long they have been open. In addition, the OCA noted incorrect RVA311 request numbers were captured for some entries and repair dates that appeared to occur before the reported dates.
- **The damaged-pole tracking spreadsheet lacked key information needed to assess backlog and repair timeliness.** Reported and completion dates were not consistently recorded, and some entries marked as "Not Completed" included completion dates or comments indicating the repairs had already been made. In addition, requests on this spreadsheet could not be easily linked to corresponding RVA311 requests. As a result, the OCA could not determine whether all damaged-pole requests closed in RVA311 were transferred to the spreadsheet.

These data limitations reduce the reliability and completeness of available repair information. As a result, management does not have a centralized and reliable way to monitor request status, measure repair timeliness, identify backlogs, assess workload, or develop meaningful performance goals and metrics.

Due to the lack of centralized tracking and the data limitations noted above, the OCA was unable to conduct a comprehensive analysis to conclude on the timeliness of the streetlight repairs.



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However, the OCA conducted several high-level analyses to gauge repair activity and identify potential issues.

- The OCA analyzed the internal Excel spreadsheets used by Streetlight Division staff to track completed work. Between July 1, 2022, and December 31, 2024, the OCA identified 12,940<sup>16</sup> streetlight repairs reported as complete and compared the reported and fixed dates to calculate repair durations. Approximately 96% of these repairs were completed within 0 to 65 days, which falls within the general repair timeframe goal. Most repairs were completed on the same day or within one day of being reported. However, because open service orders are not centrally tracked, the OCA could not readily determine whether additional backlogs exist.

According to Streetlight Division management, these repairs represent single-point outages that can be quickly addressed, and a dedicated night crew is assigned to handle this work. Management further noted that streetlight repairs represent only one component of the Division's overall responsibilities, and repair timeframes alone should not be used to determine staffing levels.

- The OCA reviewed the Damaged Pole spreadsheet as of February 27, 2025,<sup>17</sup> and identified a backlog of repair requests, including some dating back as early as calendar year 2016. The spreadsheet contained 171<sup>18</sup> entries on the "Not Completed" tab. Approximately 47% of the entries had reported dates greater than two years, which exceeds the maximum repair timeframe goal for these repairs. Approximately 33% of the entries did not include a reported date; therefore, the OCA could not determine the age of the requests.

Streetlight Division management attributed the damaged pole backlog to a combination of staff turnover, unavailable parts, and new requests being completed prior to addressing the older requests. Management also indicated that work may have been done but the spreadsheet was not updated.

In addition to these analyses, the OCA judgmentally selected five streets from each of the nine City districts and conducted site visits to determine if the streetlights were on. The OCA reviewed 543 streetlights over three nights and observed that approximately 97% of the reviewed streetlights were on at the time of the site visits.

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<sup>16</sup> This figure represents the repairs the OCA was able to readily identify as applicable to the Streetlight Division's repair timeframe goals. As previously noted, the internal Excel spreadsheets are unaudited and included various types of completed work each month. The OCA manually cleaned this data to isolate repair related items.

<sup>17</sup> Information was provided by the Streetlight Division management. The OCA did not audit the accuracy and completeness of the records.

<sup>18</sup>To be conservative, this figure excludes entries noted as complete, done or included a date.



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Overall, the OCA's limited analyses indicate that many routine streetlight repairs were completed within the general repair timeframe and that most sampled streetlights were on during site visits. However, the Streetlight Division's decentralized tracking process and data limitations prevented the OCA from reaching a comprehensive conclusion on overall repair timeliness, open work orders, backlog levels, or maintenance performance.

The OCA also attempted to benchmark the City's streetlight maintenance model against other localities. However, benchmarking was limited because several localities reviewed, including Virginia Beach, Hampton, and Norfolk, have streetlights fully or predominantly operated or maintained by utility companies, including Dominion Energy. Richmond's model is different because the City directly operates and maintains most of its streetlight system while contracting with Dominion Energy for approximately 6,000 streetlights in the southwest portion of the City.

This difference does not mean the City's current model is inappropriate. However, it does highlight the need for the City to evaluate whether its current streetlight service-delivery model remains the most effective and sustainable long-term approach. Such an evaluation should consider service quality, repair timeliness, staffing capacity, capital renewal needs, legal authority, and the level of municipal control the City wants to maintain over streetlight assets.

### Recommendation 7

Medium Priority

We recommend that the Director of Public Works implement a centralized tracking system for streetlight repair requests and work activities to improve transparency, monitor repair timeliness and backlogs, strengthen performance measurements, and support effective asset management and planning.

This system should be designed to capture relevant fields, such as:

- request source;
- asset location;
- ownership and maintenance responsibility;
- repair type and priority level;
- reported date;
- assigned staff, crew, contractor, or utility provider;
- current status;
- completion date;
- reason for delay, where applicable; and
- linkage to the related GIS asset record.



## Office of the City Auditor (OCA)

### Recommendation 8

Low Priority

We recommend that the Director of Public Works assess and, if feasible and cost-effective, implement automated service order processes to improve the accuracy, consistency, and efficiency of tracking streetlight repairs.

This assessment should evaluate:

- automated creation and routing of service orders from RVA311 or other intake sources;
- mobile or digital tools that allow staff to enter repair details at the worksite;
- integration with the centralized tracking system, GIS, and Dominion Energy repair portals;
- automated updates to request status and completion information to reduce manual entry errors and delays; and
- reporting capabilities to monitor repair timeliness, backlogs, workload, and performance trends.

If automation is determined to be feasible and cost-effective, the City should develop a plan and timeline for implementation.

### Recommendation 9

Medium Priority

We recommend that the Director of Public Works, in coordination with the Chief Administrative Officer, develop a comprehensive long-term infrastructure and service-delivery strategy for the City's streetlight system after establishing reliable baseline inventory, repairs, costs, and billing data.

This strategy should:

- be based on a complete and verified streetlight inventory, including ownership, asset condition, and maintenance responsibility;
- evaluate the operational, financial, and lifecycle implications of different service-delivery models, including continued municipal operation and expanded use of utility-managed services;



## Office of the City Auditor (OCA)

- incorporate an analysis of long-term maintenance needs, capital-renewal requirements, modernization goals, system resilience, and future technology needs;
- assess the City's staffing capacity, specialized technical needs, vendor oversight responsibilities, and the governance structures needed under each model; and
- provide a clear framework for comparing costs, service levels, risks, benefits, accountability, and long-term municipal control to support informed decision-making.



# Appendix A

## Compliance Statement, Objectives, Scope, Methodology, Management Responsibility and Conclusion on Internal Controls

### Compliance Statement

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This performance audit was conducted in accordance with the Generally Accepted Government Auditing Standards promulgated by the Comptroller General of the United States. 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 on the audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives.

### Objectives

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Evaluate the efficiency, effectiveness, and maintenance of streetlights.

### Scope

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The Department of Public Work's streetlight maintenance process during FY 2023 and the current environment. This audit focused on the functionality and repair of existing streetlights. Installation of new streetlights were not reviewed as part of this audit.

### Methodology

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The OCA performed the following procedures to complete this audit:

- Judgmentally selected five streets from each of the nine City Council districts and conducted site visits to verify whether the corresponding streetlights were operating at the time of the visit and to physically count the number of streetlights present.
- Interviewed Streetlight Division management and staff to gain an understanding of division processes and procedures for existing streetlight management and maintenance.
- Analyzed repair requests and completion data from July 1, 2022, to February 25, 2025, to quantify the repair timeframes and calculate the age of the outstanding requests to



## Office of the City Auditor (OCA)

conclude on the timeliness of the repairs.

- Attempted to benchmark the Streetlight Division with other localities.
- Reviewed the field asset survey data and compared it to the existing streetlights in the City's GIS data to conclude on the completeness of the inventory records.
- Conducted other tests as deemed necessary.

## **Management Responsibility**

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City management is responsible for ensuring resources are managed properly and used in compliance with laws and regulations; programs are achieving their objectives; and services are being provided efficiently, effectively, and economically.

## **Conclusion on Internal Controls**

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According to the Government Auditing Standards, internal control, in the broadest sense, encompasses the agency's plan, policies, procedures, methods, and processes adopted by management to meet its mission, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes systems for measuring, reporting, and monitoring program performance. An effective control structure is one that provides reasonable assurance regarding:

- Efficiency and effectiveness of operations;
- Accurate financial reporting; and
- Compliance with laws and regulations.

Based on the audit test work, the OCA concluded that internal controls were insufficient as documented throughout this report. See the Executive Summary for our overall conclusion.



## Appendix B Definition of Audit Recommendations Priorities

The Office of the City Auditor (OCA) assigns priority ratings for the recommendations based on the importance and impact of each recommendation to the City, as outlined in the table below. The OCA is responsible for assigning priority ratings for recommendations, and the City Administration is responsible for establishing target dates for implementing the recommendations.

PRIORITY LEVEL	PRIORITY LEVEL DEFINITION
<b>HIGH</b>	The recommendation addresses critical issues that are occurring that pose significant risks to the organization, including significant internal control weaknesses, non-compliance with laws and regulations, financial losses, fraud, and costly or detrimental operational inefficiencies.
<b>MEDIUM</b>	The recommendation addresses moderate issues that could escalate into larger problems if left unaddressed. While they may not pose an immediate risk, they could lead to significant financial losses or costly operational inefficiencies over time. There is potential to strengthen or improve internal controls.
<b>LOW</b>	The recommendation improves overall efficiency, accuracy, or performance in City operations.



## Office of the City Auditor (OCA)

The OCA is an independent office organized under the Richmond City Council. We aim to serve as a trusted partner in strengthening transparency and accountability in local government through independent, impactful audits that enhance public trust and improve City operations.

Our audits evaluate the effectiveness, efficiency, and compliance of City programs and services. We offer recommendations to improve performance, safeguard public resources, and promote sound governance.

### **City Auditor**

Riad Ali, CPA, CIGA

### **Audit Conducted by:**

Yolanda McCoy, CIA, CFE, CGAP, Deputy City Auditor

Leigh Ann Castro, CGAP, Lead Senior Auditor

### **Contact us:**

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**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #1</b>		<b>High Priority</b>
<p>We recommend that the Director of Public Works identify and resolve the data quality issues and gaps within the streetlight inventory, finalize the asset information, and upload the completed inventory into the system of record.</p>		
<b>Concur (Yes/No)</b>		<b>Yes</b>
<b>ACTION STEPS</b>		
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>		
<p>All recommendations referenced above will be addressed in phase 1 (Asset Inventory and GIS Integration) of the attached Streetlight Program Assessment and Action Plan.</p>		
<b>Target Date or Date Implemented</b>		November 1, 2026
<b>Title of Responsible Employee</b>		Director of Public Works



**MANAGEMENT RESPONSES**

OCA 2027-01

**Streetlight Division Maintenance  
(Final Phase)**

<b>RECOMMENDATION #2</b>		<b>High Priority</b>
<p>We recommend that the Director of Public Works develop and implement ongoing monitoring, data governance, and quality-control processes to maintain the accuracy and reliability of the streetlight inventory after it is integrated into GIS.</p> <p>These processes should:</p> <ul style="list-style-type: none"> <li>• define staff roles, responsibilities, and training requirements for maintaining data accuracy;</li> <li>• include periodic reconciliations between GIS, field activities, contractor work, and maintenance records, and billing data;</li> <li>• require timely updates to the inventory whenever streetlights are installed, removed, converted to LED, or modified;</li> <li>• incorporate automated and manual data-validation checks to identify missing, outdated, or inconsistent information; and</li> <li>• include routine management review to ensure the inventory remains complete, current, and suitable for operational, financial, and planning purposes.</li> </ul>		
<b>Concur (Yes/No)</b>		<b>Yes</b>
<b>ACTION STEPS</b>		
<p><i>(Please describe the steps you will take or have taken to address the recommendation)</i></p> <p>The recommendations referenced above will be addressed in phase 2 (Operational Assessment and Modernization) of the attached Streetlight Program Assessment and Action Plan, immediately after the streetlight inventory is completed in phase 1.</p>		
<b>Target Date or Date Implemented</b>		February 1, 2027
<b>Title of Responsible Employee</b>		Director of Public Works



**MANAGEMENT RESPONSES**

OCA 2027-01

**Streetlight Division Maintenance  
(Final Phase)**

<b>RECOMMENDATION #3</b>		<b>High Priority</b>
<p>We recommend that the Director of Public Works develop and implement a project planning and monitoring process for significant City projects, especially those involving contractor deliverables, system data, or asset information.</p> <p>At a minimum, the process should require management to:</p> <ul style="list-style-type: none"> <li>• define project objectives, deliverables, data standards, roles, and acceptance criteria before work begins;</li> <li>• identify the tools, access, staffing, and training needed to review and validate deliverables;</li> <li>• establish milestone reviews to assess progress, data quality, and unresolved issues before the project advances;</li> <li>• document management’s review and acceptance of key deliverables; and</li> <li>• ensure issues are corrected while the contract, project, or vendor engagement is still active.</li> </ul>		
<b>Concur (Yes/No)</b>	<b>Yes</b>	
<b>ACTION STEPS</b>		
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>		
<p>The CAO’s Office utilizes the attached project charter to oversee large-scale projects and complex tasks. Although the project charter was not used for the streetlight program because it started under the previous administration, it will be employed for the Streetlight Program Assessment and Action Plan.</p>		
<b>Target Date or Date Implemented</b>	August 1, 2026	
<b>Title of Responsible Employee</b>	DCAO of Operations	



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #4</b>	<b>High Priority</b>
<p>We recommend that the Director of Public Works develop and implement a structured plan to reconcile and consolidate all streetlight-related Dominion Energy billing accounts.</p> <p>The plan should include:</p> <ul style="list-style-type: none"> <li>• identifying all existing accounts and standardizing account naming conventions;</li> <li>• linking each account to a verified and finalized streetlight inventory;</li> <li>• confirming ownership, billing type, and applicable rate schedules for each account;</li> <li>• merging, eliminating, or correcting accounts as necessary to ensure accuracy and reduce complexity; and</li> <li>• evaluating the feasibility of transitioning to Dominion Energy’s GIS-based billing system once the inventory and accounts are accurate and aligned.</li> </ul>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>All recommendations referenced above will be addressed in phase 1 of the attached Streetlight Program Assessment and Action Plan.</p>	
<b>Target Date or Date Implemented</b>	November 1, 2026
<b>Title of Responsible Employee</b>	Director of Public Works



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #5</b>	<b>High Priority</b>
<p>We recommend that the Director of Public Works develop and implement a documented, risk-based reconciliation process to ensure the accuracy of Dominion Energy streetlight billing.</p> <p>This process should:</p> <ul style="list-style-type: none"> <li>• identify, research, and resolve known billing exceptions identified during the audit, including unreported LED conversions, incorrect rate categories, and accounts requiring rate schedule updates.</li> <li>• prioritize higher-risk billing types, including flat-rate circuits, LED conversions, and accounts with historical errors;</li> <li>• include procedures for verifying rate categories, confirming LED upgrades have been reported, and validating meter associations;</li> <li>• define roles, responsibilities, and review frequencies; and</li> <li>• incorporate routine trend analysis to identify unusual charges or consumption patterns.</li> </ul>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>The majority, if not all, of the recommendations referenced above will be addressed in phase 1 of the attached Streetlight Program Assessment and Action Plan. However, the criteria for the risk-based approach may differ slightly from the recommendations provided by the City Auditor’s Office.</p>	
<b>Target Date or Date Implemented</b>	November 1, 2026
<b>Title of Responsible Employee</b>	Director of Public Works



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #6</b>	<b>High Priority</b>
<p>We recommend that the Director of Public Works, in coordination with the Director of Sustainability, reconcile and correct all streetlight-related accounts within EnergyCAP and establish controls to maintain data accuracy. Efforts should include:</p> <ul style="list-style-type: none"> <li>aligning EnergyCAP account records with the finalized inventory and consolidated Dominion Energy accounts;</li> <li>establishing internal validation controls to ensure data remains accurate; and</li> <li>incorporating EnergyCAP into the City’s routine reconciliation process to monitor energy use, identify billing anomalies, and support oversight of utility expenditures.</li> </ul>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<i>(Please describe the steps you will take or have take to address the recommendation)</i>	
<p>The above-referenced recommendations will be addressed when phase 1 (Asset Inventory and GIS Integration) of the attached Streetlight Program Assessment and Action Plan is completed.</p>	
<b>Target Date or Date Implemented</b>	November 1, 2026
<b>Title of Responsible Employee</b>	Director of Public Works



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #7</b>	<b>Medium Priority</b>
<p>We recommend that the Director of Public Works implement a centralized tracking system for streetlight repair requests and work activities to improve transparency, monitor repair timeliness and backlogs, strengthen performance measurements, and support effective asset management and planning.</p> <p>This system should be designed to capture relevant fields, such as:</p> <ul style="list-style-type: none"> <li>• request source;</li> <li>• asset location;</li> <li>• ownership and maintenance responsibility;</li> <li>• repair type and priority level;</li> <li>• reported date;</li> <li>• assigned staff, crew, contractor, or utility provider;</li> <li>• current status;</li> <li>• completion date;</li> <li>• reason for delay, where applicable; and</li> <li>• linkage to the related GIS asset record.</li> </ul>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>The recommendations referenced above will be evaluated during phase 3 (Strategic Service Delivery Evaluation) of the Streetlight Program Assessment and Action Plan.</p>	
<b>Target Date or Date Implemented</b>	May 1, 2027
<b>Title of Responsible Employee</b>	Director of Public Works



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #8</b>	<b>Low Priority</b>
<p>We recommend that the Director of Public Works assess and, if feasible and cost-effective, implement automated service order processes to improve the accuracy, consistency, and efficiency of tracking streetlight repairs.</p> <p>This assessment should evaluate:</p> <ul style="list-style-type: none"> <li>• automated creation and routing of service orders from RVA311 or other intake sources;</li> <li>• mobile or digital tools that allow staff to enter repair details at the worksite;</li> <li>• integration with the centralized tracking system, GIS, and Dominion Energy repair portals;</li> <li>• automated updates to request status and completion information to reduce manual entry errors and delays; and</li> <li>• reporting capabilities to monitor repair timeliness, backlogs, workload, and performance trends.</li> </ul> <p>If automation is determined to be feasible and cost-effective, the City should develop a plan and timeline for implementation.</p>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>The recommendations referenced above will be evaluated during phase 3 (Strategic Service Delivery Evaluation) of the attached Streetlight Program Assessment and Action Plan.</p>	
<b>Target Date or Date Implemented</b>	May 1, 2027
<b>Title of Responsible Employee</b>	Director of Public Works



**MANAGEMENT RESPONSES**  
 OCA 2027-01  
**Streetlight Division Maintenance**  
**(Final Phase)**

<b>RECOMMENDATION #9</b>	<b>Medium Priority</b>
<p>We recommend that the Director of Public Works, in coordination with the Chief Administrative Officer, develop a comprehensive long-term infrastructure and service-delivery strategy for the City’s streetlight system after establishing reliable baseline inventory, repairs, costs, and billing data.</p> <p>This strategy should:</p> <ul style="list-style-type: none"> <li>• be based on a complete and verified streetlight inventory, including ownership, asset condition, and maintenance responsibility;</li> <li>• evaluate the operational, financial, and lifecycle implications of different service-delivery models, including continued municipal operation and expanded use of utility-managed services;</li> <li>• incorporate an analysis of long-term maintenance needs, capital-renewal requirements, modernization goals, system resilience, and future technology needs;</li> <li>• assess the City’s staffing capacity, specialized technical needs, vendor oversight responsibilities, and the governance structures needed under each model; and</li> <li>• provide a clear framework for comparing costs, service levels, risks, benefits, accountability, and long-term municipal control to support informed decision-making.</li> </ul>	
<b>Concur (Yes/No)</b>	<b>Yes</b>
<b>ACTION STEPS</b>	
<p><i>(Please describe the steps you will take or have taken to address the recommendation)</i></p> <p>The recommendations referenced above will be evaluated during phase 3 (Strategic Service Delivery Evaluation) of the attached Streetlight Program Assessment and Action Plan.</p>	
<b>Target Date or Date Implemented</b>	May 1, 2027
<b>Title of Responsible Employee</b>	DCAO of Operations



**Odie Donald II**  
CHIEF ADMINISTRATIVE OFFICER  
CITY OF RICHMOND, VA

June 29, 2026

Riad Ali, CPA, CIGA, City Auditor

900 E Broad Street

Richmond, VA 23219

**Re: OCA Report No. 2027-01: Streetlight Program Assessment and Action Plan**

Dear Mr. Ali,

Thank you to you and your staff for the diligence and professionalism demonstrated throughout the Streetlight Division audit. I appreciate the thorough review conducted by your office and recognize the important role independent performance audits play in strengthening accountability, improving operations, and promoting responsible stewardship of public resources.

After reviewing OCA Report No. 2027-01, I concur with all nine recommendations and agree that each identifies a meaningful opportunity to strengthen the Streetlight Program.

While I concur with each recommendation, I believe the issues identified in this audit are systemic and are not best addressed through a series of isolated corrective actions. Many of the recommendations are interrelated and depend upon establishing accurate asset information, modern management systems, and stronger governance. Accordingly, this response is organized as a comprehensive assessment and action plan designed to implement all audit recommendations through a coordinated, phased approach rather than as individual corrective actions.



**Odie Donald II**  
CHIEF ADMINISTRATIVE OFFICER  
CITY OF RICHMOND, VA

Since assuming the role of Chief Administrative Officer, I have viewed the Office of the City Auditor as a vital resource in identifying opportunities to strengthen City operations. In line with the Mayor's focus on continuous quality improvement, my focus has been on evaluating existing operations, reviewing prior audit recommendations, and implementing sustainable improvements that strengthen accountability, operational performance, and service delivery. While many of the conditions identified in this report have developed over an extended period of time, the Avula administration is fully prepared to address them moving forward.

To that end, I want to recognize the professionalism and significant commitment of the Streetlight Division staff. Despite working with incomplete asset information, aging infrastructure, and outdated business processes, they have continued to maintain the City's streetlight system and provide dependable service to Richmond residents. Their experience and dedication will serve as important assets as the improvements outlined in this response are implemented.

Rather than addressing each recommendation individually, we have directed implementation of the Streetlight Program Assessment and Action Plan, a comprehensive initiative consisting of three strategic phases. Our objective is to conduct a fundamental evaluation of how streetlight services are owned, managed, maintained, financed, and delivered while establishing the governance, technology, business processes, and performance management systems necessary to support long-term operational excellence.

To ensure focused leadership, executive accountability, and effective project management, I have designated the Deputy Chief Administrative Officer for Operations (DCAO for Operations) to provide executive leadership for the Streetlight Program Assessment and Action Plan. He will coordinate with Public Works, Finance, Information Technology, Procurement, and other participating departments; oversee implementation of the initiative; manage project activities; monitor progress toward established milestones; identify and resolve implementation challenges; and provide regular updates and recommendations regarding project status, performance, risks, and key decision points.

Substantial completion of this initiative is anticipated in approximately 14 months, culminating in the implementation of the selected long-term service delivery model and the establishment of a modern, data-driven Streetlight Program.



**Odie Donald II**  
 CHIEF ADMINISTRATIVE OFFICER  
 CITY OF RICHMOND, VA

## Streetlight Program Assessment and Action Plan

Phase	Timeline	Primary Deliverable
<b>Phase I</b>	Months 1-3	Comprehensive GIS Asset Inventory and Official System of Record
<b>Phase II</b>	Months 4-7	Operational Assessment and Modernization Strategy
<b>Phase III</b>	Months 8-10	Strategic Service Delivery Evaluation and Recommendation
<b>Implementation</b>	Months 11-14	Execute Selected Service Delivery Model and Complete Program Transition

### Phase I: Asset Inventory and GIS Integration (Months 1-3)

The first phase focuses on establishing a complete, accurate, and reliable inventory of the City's streetlight assets and integrating that information into a comprehensive GIS-based asset management system. Asset ownership, location, fixture type, pole type, condition, maintenance responsibility, utility billing associations, and other critical infrastructure information will be verified to establish the City's official system of record. Qualified professional consulting services will be procured to support asset inventory validation, GIS integration, quality assurance, data governance, asset management, and development of the implementation strategy for the remaining phases.

Completion of this phase is essential as every operational, financial, and strategic decision depends upon reliable information. Until confidence is established in the completeness and accuracy of the inventory, maintenance requirements, organizational responsibilities, utility billing accuracy, capital investment needs, infrastructure modernization, and alternative service delivery models cannot be responsibly evaluated. Likewise, potential transfer or sale of streetlight assets cannot be responsibly considered until those assets have been accurately identified, validated, valued, and incorporated into the GIS system of record.

Completion of Phase establishes the baseline against which future operational and financial performance, maintenance obligations, capital investment needs, and service-level improvements will be measured.



**Odie Donald II**  
CHIEF ADMINISTRATIVE OFFICER  
CITY OF RICHMOND, VA

## **Phase II: Operational Assessment and Modernization (Months 4-7)**

Upon completion of the inventory and GIS integration, a comprehensive assessment of the Streetlight Program will be conducted. The assessment will evaluate the organizational structure, governance framework, asset management practices, work order management processes, utility billing reconciliation, technology platforms, preventive maintenance practices, contract administration, long-term capital planning, and overall operational performance.

The assessment will also evaluate opportunities to standardize the City's inventory of approximately twenty-eight streetlight styles to improve maintenance efficiency, reduce inventory costs, simplify procurement, and strengthen lifecycle management.

Staffing levels, technical expertise, and enterprise technology requirements will be evaluated in coordination with the Department of Information Technology to support effective management of a modern GIS-based asset management system. Standardized performance measures and executive dashboards will be established to monitor inventory accuracy, repair performance, preventive maintenance, utility billing accuracy, customer response times, asset condition, operational productivity, and financial performance.

## **Phase III: Strategic Service Delivery Evaluation (Months 8-10)**

Upon completion of the operational assessment, a comprehensive cost-benefit analysis will be conducted to determine the most effective long-term service delivery model for the Streetlight Program.

The evaluation will objectively consider:

- Continued municipal ownership and operation
- Contracted maintenance services
- Public-private partnerships
- Utility-operated service models
- Transfer or sale of City-owned streetlight assets



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CHIEF ADMINISTRATIVE OFFICER  
CITY OF RICHMOND, VA

No option has been predetermined. Each alternative will be evaluated using objective criteria, including customer service, operational effectiveness, lifecycle costs, financial stewardship, staffing requirements, capital investment, resilience, accountability, municipal control, and long-term value.

Should the analysis determine that continued municipal ownership is not the most effective long-term model, alternative service delivery options will be objectively evaluated while ensuring uninterrupted service to residents and protection of public assets throughout any transition.

### **Implementation (Months 11-14)**

The activities described in this memorandum will be governed by a formal project charter defining scope, objectives, responsibilities, schedules, performance measures, reporting requirements, and accountability mechanisms.

Executive oversight will be provided through a cross-functional steering committee consisting of representatives from Public Works, Finance, Information Technology, Procurement, and other participating departments. The steering committee will coordinate implementation activities, monitor progress, resolve barriers, and ensure accountability throughout the initiative. Day-to-day project management will be provided by the Director of Public Works.

If the evaluation concludes that continued municipal ownership provides the greatest long-term value, a comprehensive modernization program will be implemented that includes:

- Completion and validation of the GIS-based asset inventory
- Full implementation of the GIS asset management system
- Asset lifecycle management
- Preventive maintenance program
- Centralized work order management
- Utility billing reconciliation and verification
- Data governance standards
- Standard operating procedures
- Standardization of streetlight styles where practical
- Organizational and staffing improvements



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- Long-term capital improvement planning
- Executive performance dashboards
- Evaluation and implementation of Smart City and energy efficiency initiatives

If another service delivery model is determined to provide greater long-term value, a comprehensive transition plan will be developed to ensure uninterrupted service while protecting operational and financial interests.

### **Expected Outcomes**

Upon completion of the Streetlight Program Assessment and Action Plan, the initiative will result in a validated GIS-based asset inventory, stronger internal controls, improved utility billing oversight, standardized performance measures, modern asset management practices, a comprehensive understanding of lifecycle costs, and an objective evaluation of the most effective long-term service delivery model.

Periodic implementation updates will be provided as major milestones are achieved, including completion of the asset inventory, operational assessment, and service delivery evaluation.

Ultimately, success will not be measured solely by completion of the audit recommendations, but by establishing a modern, data-driven Streetlight Program that delivers reliable service, protects public resources, supports informed executive decision making, and provides long-term value to the residents of Richmond.

Thank you again for the professionalism demonstrated throughout this engagement. I appreciate the value of your recommendations and look forward to implementing this initiative while keeping your office informed of our progress.

In Service,

Odie Donald II

Chief Administrative Officer



# City of Richmond

## Project Charter

1. General Project Information				
<b>Project Name:</b>	<i>Provide a concise, descriptive title that clearly communicates the project's objective.</i>			
<b>Executive Sponsors:</b>	<i>Identify the executive leaders who provide strategic direction, remove organizational barriers, and approve major project decisions.</i>			
<b>Department Sponsor:</b>	<i>Identify the department responsible for the project's successful execution and ongoing ownership.</i>			
<b>Project Investment:</b>	<i>Identify the anticipated funding required to complete the project.</i>			
<b>Mayoral Pillar Alignment:</b>	<i>Thriving and Sustainable Built Environment</i>		← <i>Mayoral Pillar</i>	
2. Project Team				
	Name	Department	Telephone	E-mail
<b>Project Manager:</b>	<i>Identify the individual responsible for managing day-to-day execution.</i>			
<b>Project Coordinator</b>	<i>Supports project administration, including scheduling, documentation, meeting coordination, and follow-up.</i>			
<b>Asst. Project Coordinator</b>	<i>Provides backup support and assists with project logistics when necessary.</i>			
<b>Team Members:</b>	<i>Identify personnel responsible for completing project tasks.</i>			
3. Stakeholders (e.g., those with a significant interest in or who will be significantly affected by this project)				
<i>Identify everyone who has an interest in the project or will be affected by its outcome.</i>				
<i>Examples include: Departments, Executive leadership, Employees, Citizens, Utilities, Vendors, Regulatory agencies, and elected officials.</i>				



# City of Richmond

## Project Charter

### 4. Business Case

#### Executive Summary

*Provide an overview of the project. Summarize: Why the project exists, Desired outcome, Expected benefits, High-level recommendation.*

*Think of this as the "elevator speech" for the project.*

#### Problem Statement

**Background:** *Explain: How the issue developed, Historical context, Previous efforts, Why action is now necessary.*

**Current Status:** *Describe: Existing conditions, Known challenges, Operational impacts, Current performance*

*Use facts whenever possible.*

**Analysis:** *This section explains what was evaluated. Include: Operational analysis, Financial analysis, Service delivery, analysis, Alternatives considered, Benchmarking, Performance data.*

*The goal is to demonstrate that recommendations are evidence-based.*



# City of Richmond

## Project Charter

**Scope:** *Include: Examples: Inventory assessment, Financial review, GIS validation, Vendor analysis*

*Not Included: Examples: Construction, Procurement, Future expansion, Capital improvements*

*A clear scope prevents "scope creep."*

### **Risks**

*Identify events that could delay or negatively affect the project.*

*Examples: Staffing shortages, Funding limitations, Data quality, Procurement delays, Weather, Regulatory approvals*

<b>Risk</b>	<b>Impact (Hi, Medium, Low)</b>
<i>The purpose is to prioritize mitigation efforts.</i>	

### **Benefits**

*Explain what the organization gains. Examples: Improved service delivery, Cost savings, Better asset management, Improved public safety, Better data, Increased accountability.*

*Benefits should be measurable whenever possible.*

### **Resources**

*Identify everything needed to complete the project. Examples: Personnel, Consultants, Software, Equipment, Vehicles, GIS support, and financial resources.*

### **Time and Cost**

*Estimate: Project duration, Major phases, Budget, Operating costs, capital costs*



# City of Richmond

## Project Charter

### Dependencies (Internal/External)

**Internal:** *Identify factors outside the project team's direct control. Examples: Other departments, IT support, Procurement, Finance, Legal*

**External** *Examples: Dominion Energy, Contractors, Consultants, State agencies, Federal agencies, Utility companies*  
*Dependencies help identify potential schedule impacts.*

**Recommendation:** *Summarize the preferred course of action. Should answer: What should leadership approve?, Why is this the preferred option? What outcome is expected?*

SAMPLE



# City of Richmond

## Project Charter

### Milestones

List the major project deliverables. Examples: Project kickoff, Inventory completed, GIS database completed, financial analysis completed, Options report completed, Final recommendation delivered, Milestones measure progress rather than individual tasks.

Project Milestones		
No.	Deliverable	Target Completion Date
1		
2		
3		
4		
5		
6		
7		
8		
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12		
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21		



# City of Richmond

## Project Charter

### 5. Communication Strategy

Describe how project information will be communicated. Include: Status meetings, Executive updates, Progress reports, Stakeholder meetings, Public communication (if applicable).

### 6. Sign-off

	Name	Signature	Date (MM/DD/YYYY)
<b>Executive Sponsor</b>	<i>The signatures formally authorize the project. Each signature indicates agreement with: Project purpose, Scope, Budget, Resources, Timeline, and Responsibilities.</i>  <i>The charter becomes the official governing document once approved.</i>		
<b>Department Sponsor</b>			
<b>Project Manager</b>			

### 7. Notes

Use this section for supplemental information that does not fit elsewhere.

Examples include: Assumptions, Acronyms, Special instructions, Future considerations, References, Related projects. instructions

SAMPLE