



PUBLIC INFORMATION

INTERNAL AUDIT DEPARTMENT



**Information Technology Audit:
OC Waste & Recycling
Selected Cybersecurity Controls
For the Year Ended March 31, 2025**

**Audit No. 2413
Report Date: September 3, 2025**

Number of Recommendations

0

**Critical Control
Weaknesses**

3

**Significant Control
Weaknesses**

1

Control Finding

OC Board of Supervisors

CHAIR DOUG CHAFFEE
4th DISTRICT

VICE CHAIR KATRINA FOLEY
5th DISTRICT

SUPERVISOR JANET NGUYEN
1st DISTRICT

SUPERVISOR VICENTE SARMIENTO
2nd DISTRICT

SUPERVISOR DONALD P. WAGNER
3rd DISTRICT



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Information Technology Audit:
OC Waste & Recycling Selected Cybersecurity Controls
September 3, 2025

AUDIT HIGHLIGHTS

SCOPE OF WORK	Perform an information technology audit of OC Waste and Recycling's (OCWR's) landfill management and billing system, Paradigm, to determine whether controls provide reasonable assurance that sensitive data is restricted, and vulnerabilities and system changes are properly managed for the year ended March 31, 2025.
RESULTS	We concluded that OCWR's design and operating effectiveness of system controls could be improved to provide reasonable assurance that sensitive data is restricted, and vulnerabilities and system changes are properly managed. We noted several significant weaknesses with various selected cybersecurity controls.
RISKS	As a result of our findings, potential risks include: <ul style="list-style-type: none"> Lack of awareness and understanding of IT business processes, misuse of IT resources, and potential cybersecurity violations. Other risks have been removed from this report due to the sensitive nature of the specific findings.
NUMBER OF RECOMMENDATIONS	Opportunities for enhancing internal controls include: <ul style="list-style-type: none"> Establishing, and periodically updating, documented procedures for Identity and Access Management, and vulnerability management. Other recommendations have been removed from this report due to the sensitive nature of the specific findings.
0	CRITICAL CONTROL WEAKNESSES
3	SIGNIFICANT CONTROL WEAKNESSES
1	CONTROL FINDING

Report suspected fraud, or misuse of County resources by vendors, contractors, or County employees to (714) 834-3608



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Audit No. 2413

September 3, 2025

To: Tom Koutroulis
OC Waste & Recycling Director

From: Aggie Alonso, CPA, CIA, CRMA
Internal Audit Department Director

Subject: Information Technology Audit: OC Waste & Recycling Selected Cybersecurity Controls

We have completed an information technology audit of OC Waste & Recycling (OCWR) Selected Cybersecurity Controls administered or monitored by OCWR for the year ended March 31, 2025. Due to the sensitive nature of specific findings (restricted information), results are redacted from public release. Additional information including background and our objectives, scope, and methodology are included in Appendix A.

OCWR concurred with all our recommendations and the Internal Audit Department considers management's response appropriate to the recommendations in this report.

We will include the results of this audit in a future status report submitted quarterly to the Audit Oversight Committee and the Board of Supervisors. In addition, we will request your department complete a Customer Survey of Audit Services, which you will receive shortly after the distribution of our final report.

We appreciate the courtesy extended to us by OCWR during our audit. If you have any questions, please contact me at (714) 834-5442 or Deputy Director Jose Olivo at (714) 834-5509.

Attachments

Other recipients of this report:

- Members, Board of Supervisors
- Members, Audit Oversight Committee
- County Executive Office Distribution
- OCWR Distribution
- Robin Stieler, Clerk of the Board
- Foreperson, Grand Jury
- Eide Bailly LLP, County External Auditor

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RESULTS

**BUSINESS PROCESS
& INTERNAL
CONTROL
STRENGTHS**

Business process and internal control strengths noted during our audit include:

- ✓ OCWR has local backup servers at landfills to help restore operations in the event of disruption (e.g. network outage, hardware failure, etc.).
- ✓ OCWR assigns predefined user roles where each role is granted specific security permissions to their Paradigm system, which is used to manage landfill transactions. OCWR maintains audit logs for all landfill transactions and actions performed in the Paradigm system.



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Content has been removed from Finding No. 1 through 3 due to the sensitive nature of the specific findings.

FINDING NO. 4	<p>Department IT Procedures</p> <p>Departments need IT procedures that outline specific steps for performing tasks to ensure consistency and accuracy. They act as a guide for employees, providing clear instructions and best practices for completing tasks.</p> <p>OCWR did not have certain IT procedures for Identity and Access Management, and vulnerability management, and while they have documented procedures regarding security implementation and deployment of computing hardware, software, mobile, cloud services, and storage devices, we observed the procedures have not been updated since July 2016.</p>
CATEGORY	Control Finding
RISK	Without formal IT procedures, there can be a lack of awareness and understanding of IT business processes and controls established by management, misuse of IT resources, and potential cybersecurity violations.
RECOMMENDATION	<p>OCWR management:</p> <ul style="list-style-type: none"> A. Establish documented procedures for Identity and Access Management, and vulnerability management. B. Establish a process to periodically review and update departmental procedures to ensure they are accurate and contain relevant information.
MANAGEMENT RESPONSE	<p>Concur. OCWR and OCIT will update existing or create new departmental procedures that document policies related to Identity and Access Management and Vulnerability management to minimize risks associated with unauthorized access to the Paradigm application. OCWR will periodically review and update these procedures in accordance with Policy and Procedure 1.29 which establishes guidelines for maintaining and updating departmental policy and procedures every two years.</p>

AUDIT TEAM	<p>Michael Dean, CPA, CIA, CISA Jimmy Nguyen, CISA, CFE, CEH Stephany Franco Gabriela Cabrera, CIA</p> <p>Assistant Deputy Director Senior IT Audit Manager Senior IT Auditor Administrative Services Manager</p>
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APPENDIX A: ADDITIONAL INFORMATION

OBJECTIVE	Evaluate OCWR's design and operating effectiveness of internal control to determine whether Paradigm controls provide reasonable assurance that sensitive data is restricted, and vulnerabilities and system changes are properly managed.
SCOPE & METHODOLOGY	Our engagement scope was limited to selected critical security controls over the Paradigm system for the year ended March 31, 2025. Our methodology included inquiry, observation, examination of documentation, and sampling of relevant items.
EXCLUSIONS	We did not evaluate application controls or processes that involve external parties, such as OCIT.
PRIOR AUDIT COVERAGE	We have not issued any audit reports for OCWR with a similar scope within the last ten years.
BACKGROUND	<p>OCWR's mission is serving the County's solid waste disposal needs by providing comprehensive waste management services, operating public landfills, protecting the local environment, investing in renewable energy initiatives, and promoting recycling.</p> <p>The department oversees one of the nation's leading solid waste disposal systems, serving residents and businesses in the County's 34 cities and unincorporated areas. It operates three active landfills including Olinda Alpha Landfill near Brea, Frank R. Bowerman Landfill near Irvine, and Prima Deshecha Landfill near San Juan Capistrano, that are among the largest in the State. These landfills collectively process more than 4 million tons of solid waste annually and are state-of-the-art facilities in environmental engineering.</p> <p>To account for the landfill activity, OCWR utilizes the Paradigm system, which includes platforms and modules, such as CompuWeigh (data maintenance), Accounts Receivable & Aging module (deferred billings), WeighStation (transaction processing at the landfill sites) and Disposal Reporting (State reporting system).</p>

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PURPOSE & AUTHORITY	We performed this audit in accordance with the Fiscal Year 2024-25 Audit Plan and Risk Assessment approved by the Audit Oversight Committee (AOC) and the Board of Supervisors (Board).
PROFESSIONAL STANDARDS	Our audit was conducted in conformance with the Global Internal Audit Standards issued by the International Internal Audit Standards Board.
FOLLOW-UP PROCESS	<p>In accordance with professional standards, the Internal Audit Department has a process to follow-up on its recommendations. A first follow-up audit will generally begin six months after release of the initial report.</p> <p>The AOC and Board expect that audit recommendations will typically be implemented within six months or sooner for significant and higher risk issues. A second follow-up audit will generally begin six months after release of the first follow-up audit report, by which time all audit recommendations are expected to be implemented. Any audit recommendations not implemented after the second follow-up audit will be brought to the attention of the AOC at its next scheduled meeting.</p> <p>A Follow-Up Audit Report Form is attached and is required to be returned to the Internal Audit Department approximately six months from the date of this report to facilitate the follow-up audit process.</p>
MANAGEMENT'S RESPONSIBILITY FOR INTERNAL CONTROL	In accordance with the Auditor-Controller's County Accounting Manual No. S-2 Internal Control Systems: "All County departments/agencies shall maintain effective internal control systems as an integral part of their management practices. This is because management has primary responsibility for establishing and maintaining the internal control system. All levels of management must be involved in assessing and strengthening internal controls." Internal control should be continuously evaluated by management and weaknesses, when detected, must be promptly corrected. The criterion for evaluating internal control is the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework: 2013 (Framework). Our audit complements but does not substitute for department management's continuing emphasis on control activities and monitoring of control risks.
INTERNAL CONTROL LIMITATIONS	Because of inherent limitations in any system of internal control, errors or irregularities may nevertheless occur and not be detected. Specific examples of limitations include, but are not limited to, resource constraints, unintentional errors, management override, circumvention by collusion, and poor judgment. Also, projection of any evaluation of the system to future periods is subject to the risk that procedures may become inadequate because of changes in conditions or the degree of compliance with the procedures may deteriorate. Accordingly, our audit would not necessarily disclose all weaknesses in the department's operating procedures, accounting practices, and compliance with County policy.



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APPENDIX B: REPORT ITEM CLASSIFICATION

Critical Control Weakness	Significant Control Weakness	Control Finding
<p>These are audit findings or a combination of audit findings that represent critical exceptions to the audit objective(s) and/or business goals. Such conditions may involve either actual or potential large dollar errors or be of such a nature as to compromise the department's or County's reputation for integrity. Management is expected to address Critical Control Weaknesses brought to its attention immediately.</p>	<p>These are audit findings or a combination of audit findings that represent a significant deficiency in the design or operation of internal controls. Significant Control Weaknesses require prompt corrective actions.</p>	<p>These are audit findings concerning the effectiveness of internal control, compliance issues, or efficiency issues that require management's corrective action to implement or enhance processes and internal control. Control Findings are expected to be addressed within our follow-up process of six months, but no later than twelve months.</p>

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APPENDIX C: OCWR MANAGEMENT RESPONSE



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Telephone: (714) 834-4000
Fax: (714) 834-4183

July 31, 2025

TO: Aggie Alonso, CPA, CIA, CRMA
Internal Audit Department Director

SUBJECT: Response – Audit No. 2413: OC Waste & Recycling Selected Cybersecurity Controls

OC Waste & Recycling (OCWR) has received the draft report of the Internal Control Audit of Selected Cybersecurity Controls for the year ended March 31, 2025, Audit No. 2431. As requested, the following narrative summarizes the three (3) significant control weaknesses and one (1) control finding and responses from OCWR's management.

FINDING NO. 1 – [REDACTED]

[REDACTED]

FINDING NO. 2 – [REDACTED]

[REDACTED]

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**FINDING NO. 3 –****FINDING NO. 4 – Department IT Procedures**

OCWR management:

- A. Establish documented procedures for Identity and Access Management, and vulnerability management.
- B. Establish a process to periodically review and update departmental procedures to ensure they are accurate and contain relevant information.

OCWR Management Response:

Concur. OCWR and OCIT will update existing or create new departmental procedures that documents policies related to Identity and Access Management and Vulnerability management to minimize risks associated with unauthorized access to the Paradigm application. OCWR will periodically review and update these procedures in accordance with Policy and Procedure 1.29 which establishes guidelines for maintaining and updating departmental policy and procedures every two years.

OC Waste & Recycling appreciates the collaborative approach taken by Internal Audit in drafting the audit report and the courtesy extended to staff involved. Should you have

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any further questions, please contact Jo Anne Taylor, Business Operations and Contracts at (714) 834-5513 or Fatima Son, Accounting Manager at (714) 834-4135.

Thank you.



Tom Koutroulis, OCWR Director

cc: Michelle Aguirre, County Executive Office
Lisa Fernandez, Performance Management and Policy Director, County Executive Office
Michael Dean, Senior Audit Manager, Internal Audit Department
Lisa Smith, Deputy Director, Business Services and External Affairs, OCWR
Ila Patel, OCWR Accounting Manager, Auditor-Controller
Tyler Piper, Business Relationship Manager, OCIT