Re-Review of the 2013 Performance Audit of the City's Pothole Repair Operations

Why OCA Did This Study

The abundance of potholes throughout the City of San Diego remains a primary concern for the public and City leadership. In 2013, the Office of the City Auditor (OCA) conducted an audit of the City's pothole operations. That audit issued four recommendations covering efficient deployment strategies, improved data management, and efficiency performance metrics. Since potholes are still a primary concern, we conducted a re-review audit of the City's pothole repair operations.

The objective of this re-review is to determine the extent to which the Transportation Department (Transportation) is still implementing the identified (or similar) recommendations.

What OCA Found

The Transportation Department maintained implementation of most of the recommendations from the 2013 audit, but some efforts should be expanded or updated.

Topic 1: Maximizing Resources

The 2013 audit found that the deployment of pothole crews could operate more efficiently. Our re-review found that while Transportation now aims to send the nine patch trucks to each of the nine Council Districts, **routing efficiency could be further improved**.

Assigning pothole requests in even closer geographic proximity would significantly improve the efficiency of operations. Mapping software could help assign pothole requests in closer proximity to each other, which would increase the number of potholes repaired and reduce the number of miles driven daily. By grouping pothole assignments in closer proximity for one day, we found that **potholes repaired could have increased by 27 percent and miles driven could have decreased by 40 percent**.

Furthermore, by responding to pothole requests more efficiently, Transportation could likely have more time to **proactively repair potholes, including in areas that do not request repairs as frequently as others**.

Exhibit 7: In the Proximity Model, Crews Could Have Responded to 27% More Pothole Requests and Could Have Driven 40% Less Miles Compared to the Actual Work Completed on July 17, 2023

	Actual 7/17/2023	Model 7/17/2023	Efficiency Improvement with Proximity Approach
Potholes and Pothole Requests Responded to	71	90	27% more potholes
Average Potholes Per Crew	11.8	15	27% more potholes
Total Miles Driven	417	248	40% less miles
Average Miles Per Truck	69	41	40% less miles

Source: OCA generated based on GIS model results, Daily Work Report forms, and BlueWorx pothole data.

Our re-review also found that **Transportation does not have enough patch trucks because they are frequently out for maintenance**. We found that four out of nine patch trucks were each out of service for repairs for more than 20 percent of a 15-month period.

When trucks are unavailable, all nine crews cannot be deployed to repair potholes, reducing the number of potholes that can be repaired with the program's $3.95 million budget. **The addition of a backup patch truck for a one-time cost of about $174,000 would substantially increase the number of potholes repaired** and decrease the average cost to repair a pothole.

We also found that a staffing analysis would allow Transportation to assess how to best utilize available staff when patch trucks are out for repairs as well as other staffing efficiencies.

Topic 2: Data Management

The 2013 audit found issues with data entry and supervisor reviews of data. Our re-review found that the data entry forms now have separate fields for data points, such as potholes repaired and square footage of asphalt, and supervisors conduct a thorough review of the data entered.

We also found that while crews now record the data points on the paper forms as well as into the online platform, BlueWorx, **this process is time intensive and repetitive**. We also found that crews occasionally do not enter data points into BlueWorx, because the system does not require crews to enter all data points. Additionally, the supervisor conducts a daily time-intensive comparison review of paper forms against the data in the system, which limits the amount of time the supervisor can manage pothole operations in the field.

Topic 3: Monitoring Performance

The 2013 audit found that an efficiency performance measure would help ensure that Transportation utilizes its resources in the most efficient manner. Our re-review found that Transportation implemented an efficiency KPI for one fiscal year, but it no longer uses an efficiency performance metric. **Transportation does not track or monitor efficiency metrics, such as the average number of pothole requests completed by each crew or by the department on a daily, weekly, or monthly basis**. Adding an efficiency metric would allow Transportation to determine if pothole operational resources are being utilized in an efficient manner and would help right-size the current daily goal of pothole requests for each crew.

We also found that **because pothole operations are based on public requests there could be inequity in pothole repairs across the City**. However, assessing the equity of pothole operations across the City is complex, due to the various factors that must be taken into consideration, such as: the frequency of pothole requests in each Council District, the condition of streets, the lane mileage in each Council District, as well as the mileage of heavy traffic streets (which tend to have more potholes).

We also found that crews have not consistently recorded proactively repaired potholes into BlueWorx, resulting in reports that do not include all pothole repairs. Notably Transportation stated it has begun to train staff on including entering proactively repaired potholes into BlueWorx.

What OCA Recommends

We make 10 recommendations across the three re-review topics as described below:

Topic 1 – Maximizing Resources: Four recommendations to increase the efficiency of pothole operations, specifically for Transportation to: try to implement a mapping software for pothole repair assignments, emphasize the budget request for at least one additional patch truck, and conduct a staffing analysis to determine how to best maximize the productivity of available staff.

Topic 2 – Data Management: Three recommendations to strengthen the efficiency and accuracy of data collection, specifically for Transportation to: provide crews with guidance on quantifying potholes, include IT controls to ensure all data is recorded, and require crews to only use paper forms in the field when necessary.

Topic 3 – Monitoring Performance: Three recommendations to improve Transportation's ability to monitor the performance of pothole operations, specifically for Transportation to: implement an efficiency performance metric, evaluate the equity of pothole repair operations across the City, and enter proactively repaired potholes into BlueWorx.

Transportation agreed to implement all recommendations.

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