

Performance Audit of the City's Street Maintenance Program

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Finding 1

The Transportation Department uses many best practices for prioritizing street maintenance; however, these practices should be reflected in a public and comprehensive 5-year pavement management plan to increase public transparency and accountability.

Finding 2

The pavement management plan should also capture the Transportation Department's efforts to address unimproved streets and alleys.

Finding 3

To ensure an optimal and cost-effective pavement management plan, the City should conduct regular pavement condition assessments.

Finding 4

The City needs a long-term funding strategy for street maintenance as current funding is insufficient to achieve the City's street condition goals.

Finding 5

The City has not been able to expend all available street maintenance resources, and should continue to develop strategies to increase capacity.

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The Office of the City Auditor would like to thank staff from the following departments and agencies for their assistance during this audit:

- Transportation Department
- Engineering and Capital Projects Department
- Department of Finance



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Performance Audit of the City's Street Maintenance Program

Why OCA Did This Study

Decades of underinvestment in the City's 3,000-mile street network have degraded the overall quality of City streets, leading to dissatisfaction amongst City leaders and residents, as well as a large and growing deferred maintenance backlog that is estimated at over \$1.2 billion.

This audit covers similar areas to a June 2023 report from the San Diego County Grand Jury, and also reviewed how the Street Maintenance Program manages unimproved streets as well as the overall capacity of the program to complete the repair mileage it is funded for. Specifically, **we conducted this performance audit to determine whether the Transportation Department adequately plans for street maintenance to ensure that repairs are efficient, effective, equitable, and sufficiently funded.**

What OCA Found

Finding 1: The Transportation Department uses many best practices for prioritizing street maintenance; however, these practices should be reflected in a public and comprehensive 5-year pavement management plan to increase public transparency and accountability.

Concurrently with this audit, the Transportation Department developed and published its first-ever Pavement Management Plan (PMP) in January 2024. **We found the new PMP includes most essential elements**, including a 5-year listing of planned projects; maintenance mileage and budget needed to achieve the Pavement Condition Index (PCI) goal of 70; trends in street repair mileage and budget; and PCI scores over time by Council District.

While the new PMP is a major step forward, we found that it does not include equity goals and trends. In addition, while streets.sandiego.gov now includes general information on why a street repair project may be cancelled or delayed, the website does not provide contact information for residents to inquire about the status of specific projects.

In addition, Transportation has not yet developed a Standard Operating Procedure to **ensure that the PMP is updated on an annual basis and includes all essential elements.**

Exhibit 3: Overlay and Slurry Seal are Two Types of Maintenance Activities



Source: City of San Diego Facebook and photo from OCA field visit.

Finding 2: The Pavement Management Plan should also capture Transportation's efforts to address unimproved streets and alleys.

The City currently has 38 miles of unimproved streets and 24 miles of unimproved alleys. These streets represent an important area of inequity that the City has recently begun to address.

The PMP includes discussion of selection factors, such as the number of residents served and safety concerns such as flooding, that will be used to prioritize which unimproved streets will be brought up to standard. However, while the PMP discusses several possible strategies for addressing unimproved streets, we found it **does not establish a strategy to be pursued.** Further, **Transportation indicates that it will pursue a dedicated funding source in FY2025 for the improvement of unimproved roads.**

Finding 3: To ensure an optimal and cost-effective pavement management plan, the City should conduct regular pavement condition assessments.

Best practices dictate cities to regularly conduct pavement conditions assessments to ensure the City is selecting the most optimal streets for maintenance. Transportation requested \$500,000 for a condition assessment in FY2020, but it was not provided until FY2023. As a result, the City did not complete a condition assessment for more than 7 years, and **Transportation potentially used unreliable data to plan approximately \$180 million in street maintenance** from FY2021–FY2023.

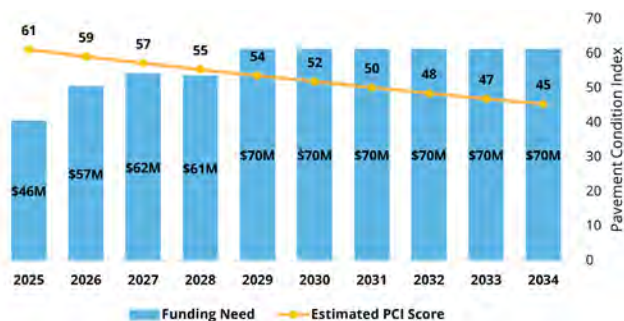
The new assessment found City streets had an average PCI of 63, while Transportation had estimated a PCI of 50. This means that Transportation was using significantly inaccurate data to plan street maintenance work, likely for several years. For example, **we found that for one quarter of street segments, Transportation’s estimates were off by 26 points or more.**

Finding 4: A long-term funding strategy is essential to ensure that the City has sufficient funding to achieve its street condition goals.

We found that the Street Maintenance Program has insufficient and unpredictable funding, and that even recent efforts to increase funding are not enough to address the approximately \$1.9 billion need over the next 10 years. In fact, **the most realistic funding scenarios show that the condition of the City’s streets are likely to get worse.** The City has only identified \$645 million in funding, and increased reliance on the General Fund and special revenue funds is not feasible or sustainable and would not close the remaining \$1.2 billion gap.

While the new PMP briefly describes possible avenues to increase funding, **it does not establish a specific funding strategy.** Continuing to underinvest in street maintenance will lead to more and more streets falling into disrepair. It will then cost more—likely hundreds of millions more—to bring streets up to a PCI of 70 in the long run.

Exhibit 28: If Annual Funding Levels Stay the Same, the Estimated Average PCI of the City’s Street Network Would Continue to Decrease from an Estimated PCI of 61 in FY2025 to a PCI of 45 in FY2034



Notes: This scenario was created from Transportation’s pavement management system, Cartegraph. This scenario is based on historical funding levels for street maintenance and does not assume debt financing. While the current network PCI is 63, it is estimated to decline to 61 by FY 2025, where the chart timeline begins.
Source: OCA generated based on data received from Transportation.

Finding 5: The Street Maintenance Program has not been able to expend all available resources and should continue to develop strategies to increase capacity.

In addition to a funding strategy, the City also needs to continue to develop operational strategies to increase the capacity of the Street Maintenance Program. We found that over the last 6 years, **the program only spent 79 percent of the funds it was allocated**, even though resources are far less than what is needed to achieve and maintain a PCI of 70. We also found that in each of the last 5 years, **the program only completed 71 percent or less of the street repair mileage goals it expected to achieve** with available funding, meaning even fewer streets have been maintained than the program’s limited resources allow for.

What OCA Recommends

We made **7 recommendations** to help ensure the Street Maintenance Program is transparent, efficient, equitable, and sufficiently funded. As described above, the new PMP and related efforts address many elements of our recommendations. Major remaining elements include:

- Implementing a **Standard Operating Procedure** to ensure that the PMP is updated on an annual basis and includes all essential elements;
- Establishing and pursuing a **strategy to address unimproved streets**;
- Establishing and pursuing a **funding strategy** to ensure that resources are stable and sufficient to support an efficient and effective Street Maintenance Program
- Continuing to develop and implement **strategies to increase the program’s capacity**, and publishing these strategies and results in the PMP.

Transportation agreed with all 7 recommendations.

For more information, contact Andy Hanau, City Auditor, at (619) 533-3165 or cityauditor@sandiego.gov.

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Background

All San Diegans benefit from a well-maintained street network that serves the diverse needs of its residents and communities. Streets serve a variety of purposes, including the conveyance of people, vehicles, goods, and services.

The City of San Diego (City)—currently home to nearly 1.5 million people who make approximately 178 million trips by vehicle each year—is expected to grow to 1.9 million by 2050. This population and employment growth will only increase demand on the City’s transportation infrastructure. As such, high quality pavement is essential for a safe, predictable trip. In fact, driving on deteriorated roads costs California motorists \$22 billion a year—\$808 per driver—in the form of additional vehicle repairs, accelerated vehicle depreciation, and increased fuel consumption and tire wear. Since 2018, the City’s public liability claims due to injuries or damage to vehicles caused by potholes or road defects, such as deteriorated or missing asphalt, sunken trenches, or gaps between the asphalt and curb, totaled approximately \$2 million.¹

Decades of underinvestment have degraded the quality of the street network.

The quality of the City’s street network has been and continues to be a top priority among City residents and Councilmembers each year. Decades of underinvestment have degraded the quality of the street network. In fact, in the City’s last Resident Survey from FY2018, 50–60 percent of respondents were dissatisfied with the condition and quality of the City’s streets. And while the City has a goal to reduce the number of car trips, the San Diego Association of Governments projects that by 2035, nearly 80 percent of all trips in San Diego will still be by vehicles that use streets, such as cars, other private vehicles, bicycles and buses. Additionally, the aim of the City’s Mobility Action Plan is to expand and improve mobility options to suit all residents’ transit needs, which include increasing the number of resident commuters using bikes and transit or walking as their primary modes of transportation. While the number of cars may decrease by 2035, streets will continue to be a significant part of the everyday lives of the City’s residents. **Exhibit 1** below shows a highly trafficked intersection in San Diego’s downtown area.

¹ This does not include additional liabilities that may be due to road defects, such as pedestrian trip and falls and bicycle crashes.

Exhibit 1

Streets are Used by Motorists, Bicyclists, Public Transportation Commuters, and Pedestrians



Source: Image obtained from Wikimedia Commons.

The Transportation Department is responsible for the operation and maintenance of the City's street network.

The City's current street network consists of approximately 3,000 centerline miles of streets.² Transportation is also responsible for maintaining approximately 62 miles of unimproved streets and alleys throughout the City. An unimproved street or alley is primarily a dirt or gravel road paved with less than two inches of hot mix asphalt, is not graded or paved for drainage, is missing a sufficient base, and/or has not been constructed to present design standards. These streets are not typically included in the pavement condition assessment as they do not have pavement.³

² The City has approximately 6,600 lane miles of streets. Transportation has historically reported out centerline miles, which represent the total length of a given road. As part of the FY2023 pavement condition assessment, Transportation has switched to reporting repair miles as lane miles. Lane miles are calculated as the total length of individual lanes within a street. Lane miles are considered more accurate than centerline miles and are an industry standard.

³ According to Transportation, they do grade these streets for drainage, minor asphalt repair, and access on an as-needed basis.

A primary goal of the Transportation Department (Transportation) is to improve the quality of the street network. It does so by maintaining street and alley surfaces, sidewalks, streetlights, traffic signals, traffic signs, pavement markings, guardrails, and other traffic control and safety devices. As further discussed in Finding 2, while Transportation maintains unimproved streets, Council Policy requires it to do so at a different level of service than improved streets. City crews ensure unimproved streets remain passable; however, abutting property owners are financially responsible for improving these streets.

The City's Street Maintenance Program is primarily managed by Transportation, but the Engineering and Capital Projects Department oversees planned capital maintenance.

Street maintenance activities are categorized into Operations and Maintenance and Capital Improvements Program (CIP) activities, as shown in **Exhibit 2**, and are funded by Transportation's operating budget and the City's CIP budget, respectively. While the City's crews perform most of the minor maintenance and repair work, contractors perform seal treatments (slurry, scrub, and cape), and overlay, asphalt street reconstruction, and concrete streets reconstruction.

Transportation is the lead department for most Street Maintenance Program activities.

Transportation is the lead department for most Street Maintenance Program activities, including monitoring street conditions, planning streets for maintenance, and overseeing the City crews and contractors that perform minor maintenance and seal treatment work. However, in FY2021, the City transferred management of capital street improvements to the Engineering and Capital Projects Department (E&CP). While Transportation is still responsible for planning which streets receive capital maintenance, E&CP oversees the design and construction of these projects.

Exhibit 2

Street Maintenance Activities are Split Between Operations & Maintenance and the City’s Capital Improvement Program

Operations & Maintenance	Capital Improvement Program
<ul style="list-style-type: none"> ○ Pothole repair ○ Slurry seal ○ Minor asphalt repairs ○ Dig-outs ○ Minor mill and pave ○ Other seal treatments (scrub, cape, crack) 	<ul style="list-style-type: none"> ○ Asphalt overlay ○ Reconstruction ○ Concrete streets

Source: OCA generated based on review of a report to City Council, an interview with Transportation, and review of Transportation’s capital budget information.

The most cost-effective way to extend streets’ service life is to perform regular preventative maintenance.

Transportation employs several methods for maintaining the City’s street network. The most cost-effective way to extend streets’ service life is to perform regular preventative maintenance such as slurry seal. Slurry seal is a coating of up to 3/8 of an inch thick of rubberized emulsion mixed with aggregate—finely crushed rock and sand. Generally, if applied about every 3–7 years, slurry seal can reduce pavement deterioration and help pavement reach its expected service life of about 25 years.

Other commonly performed maintenance treatments include crack, cape, and scrub seals. Crack sealing involves treating cracks in the road to reduce the amount of moisture that can infiltrate the asphalt surface. Cape seals involve the placement of a layer of asphalt emulsion followed by the application of aggregate chips. This is then overlaid with a slurry seal. The chip seal provides enhanced crack sealing and waterproofing, while the slurry seal adds an additional protective layer and restores the surface appearance. Similar to chip seals, scrub seals use “scrub brooms” to work the emulsion into the surface cracks which helps ensure the surface is completely sealed.

When streets require more extensive repair, asphalt overlay (also known as repaving), is used to place a new layer of asphalt over an old, worn-out street surface. Work typically involves grinding the existing street down 1 to 3 inches and then paving it with a new layer of asphalt. Asphalt overlay is used to rehabilitate streets with moderate pavement deterioration due to aging, traffic, and other stressors. If overlay is performed when needed, it can increase the life of a street

by about 21 years. Once a street’s pavement shows visible signs of several distresses, the street most likely requires reconstruction, which is more costly than repaving. **Exhibit 3** shows workers performing slurry seal and asphalt overlay work.

Exhibit 3

Overlay and Slurry Seal are Two Types of Maintenance Activities



Source: City of San Diego Facebook and photo from OCA field visit.

Periodic condition assessments measure the quality of the City’s street network.

Transportation recently switched its pavement condition assessments to use only the Pavement Condition Index (PCI) score.

Transportation periodically assesses the pavement condition of each street and assigns a score that reflects a street’s overall condition. For many years, Transportation used the Overall Condition Index (OCI), a weighted pavement rating system developed by the U.S. Army Corps of Engineers that incorporates factors such as surface distress, ride quality, and other street attributes to assign a score between 0 and 100. As shown in Exhibit 4 below, OCI is comprised of 60 percent Pavement Condition Index (PCI) score and 40 percent Ride Index score. To better align with the industry standard and with other jurisdictions, Transportation recently switched its pavement condition assessments to use only the Pavement Condition Index (PCI) score rather than the OCI score. The various factors that determine PCI score (and overall OCI score) are also displayed in **Exhibit 4** below.

Exhibit 4

Components of OCI and PCI Scores

OCI Score Components

=

60% PCI Score

Type of street
 Deterioration Rate
 Pavement Distresses (i.e., type and size of cracks, potholes, rutting, shoving, etc.)

+

**40% Ride Index
 (smoothness/roughness of pavement)**

Ride Quality

Source: OCA generated based on reviewed of the 2016 Pavement Condition Assessment report, Transportation’s Pavement Management Plan, and an interview with Transportation.

An OCI score of 100 represents a pavement surface in perfect condition while a score of 0 represents pavement that is beyond repair and requires complete reconstruction. Streets are placed in one of three categories based on the OCI: Good, Fair, or Poor. Similarly, the PCI rating system is broken down into seven categories based on the PCI: Good, Satisfactory, Fair, Poor, Very Poor, Serious, and Failed. A comparison of the OCI and PCI score categories is displayed in **Exhibit 5** below.

Exhibit 5

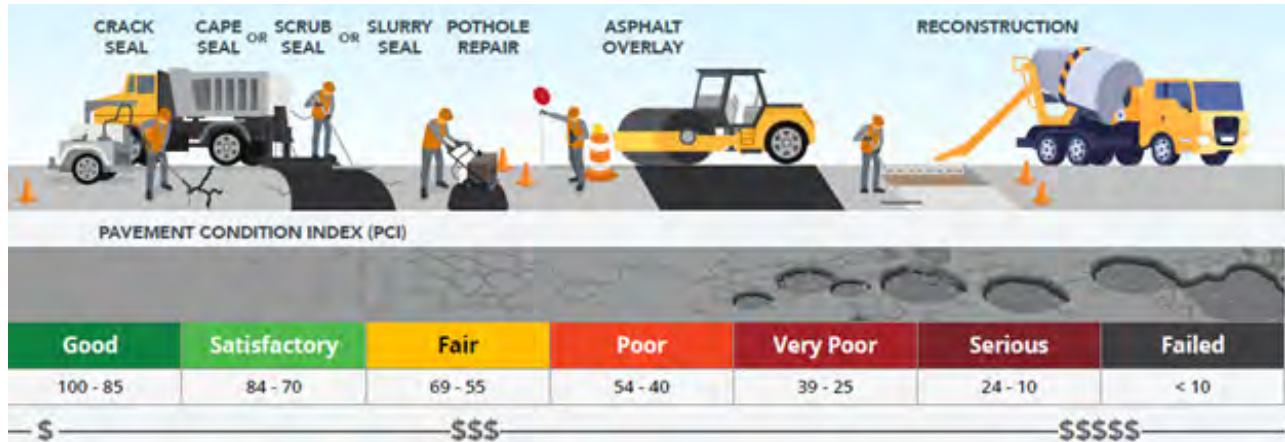
Pavement Condition is Assessed into Three Categories for OCI Scores and Seven Categories for PCI Scores

OCI Score Categories	PCI Score Categories
<p style="text-align: center;">Good OCI: 70-100 Treatment Needed: Slurry Seal Cost Per Mile: \$220,000</p> <p>Good: A street in good condition has little or no cracking, no potholes, or other distresses; has excellent drivability; and needs little maintenance or remedial repair.</p>	<p style="text-align: center;">Good PCI: 85-100 Treatment Needed: Slurry Seal</p>
	<p style="text-align: center;">Satisfactory PCI: 70-84 Treatment Needed: Slurry Seal</p>
<p style="text-align: center;">Fair OCI: 40-69 Treatment Needed: Overlay Cost Per Mile: \$1.7 – \$1.8 Million</p> <p>Fair: A street in fair condition has moderate cracking, some minor potholes, has adequate drivability, and is typically in need of remedial repairs and a slurry seal, or minor area repairs.</p>	<p style="text-align: center;">Fair PCI: 55-69 Treatment Needed: Overlay</p>
	<p style="text-align: center;">Poor PCI: 40-54 Treatment Needed: Overlay</p>
<p style="text-align: center;">Poor OCI: 0-39 Treatment Needed: Reconstruction Cost Per Mile: \$6 – \$10 Million</p> <p>Poor: A street in poor condition has severe cracking, numerous areas of failed pavement with possible sub-base failure, exhibits a rough ride, and requires a comprehensive repair or a total reconstruction.</p>	<p style="text-align: center;">Very Poor PCI: 25-39 Treatment Needed: Reconstruction</p>
	<p style="text-align: center;">Serious PCI: 10-24 Treatment Needed: Reconstruction</p>
	<p style="text-align: center;">Failed PCI: <10 Treatment Needed: Reconstruction</p>

Source: OCA generated based on Transportation’s 2016 Pavement Condition Assessment staff report, Transportation’s Pavement Management Plan, and an interview with Transportation.

The treatment needed varies based on severity of pavement condition. As displayed in Exhibit 5 above and as illustrated in Exhibit 6 below, OCI scores of Poor and PCI scores of Failed, Serious, and Very Poor require reconstruction; OCI scores of Fair and PCI scores of Poor and Fair require overlay; and OCI scores of Good and PCI scores of Satisfactory and Good require only slurry seal.

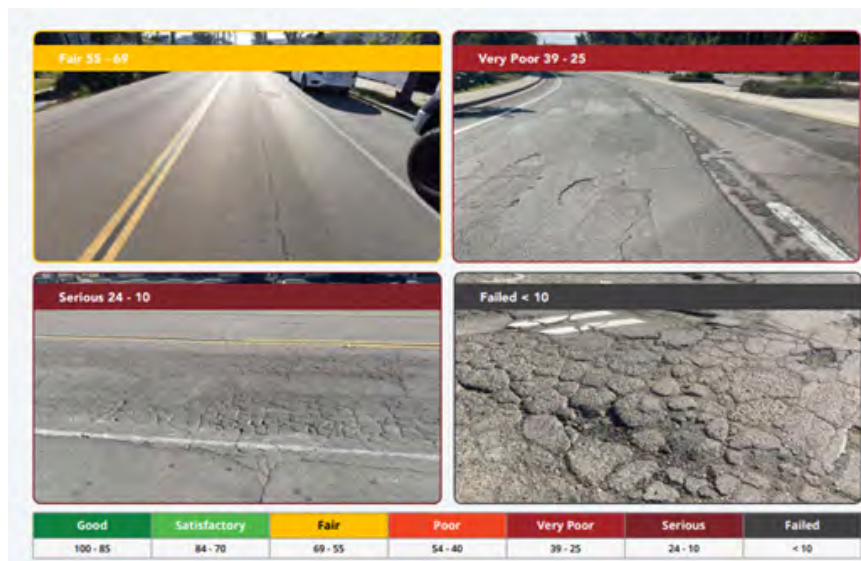
Exhibit 6
Types of Street Repairs by Condition Category



Source: Transportation’s Pavement Management Plan, FY2024.

Exhibit 7 shows some examples of streets according to their PCI scores.

Exhibit 7
Examples of Streets According to Their PCI Scores



Source: Transportation’s Pavement Management Plan, FY2024.

The City recently completed its first pavement condition assessment in more than 7 years.

In FY2016, Transportation completed a pavement condition assessment that resulted in a weighted average network OCI score of 72. According to this report, 60 percent of the City's roads were in good condition, with 34 percent in fair condition, and only 6 percent in poor condition.

Transportation's goal is to conduct a condition assessment every four years. However, as further discussed in Finding 3, the prior Administration did not fund Transportation's FY2020 budget request for a condition assessment that was scheduled for FY2021. After more than 7 years, the new Administration funded a condition assessment in FY2023, which was recently completed in November FY2023. This condition assessment uses PCI.

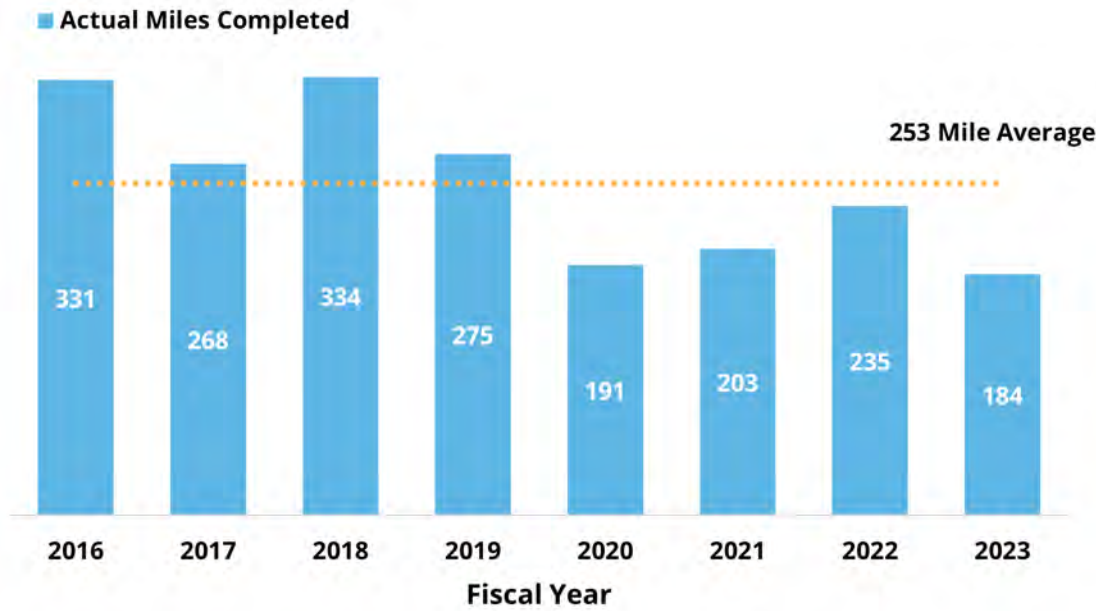
In the last 7–8 years, the average quality of the City's network has declined from satisfactory to fair condition—an 11 percent decline.

The FY2023 condition assessment rates the City's street network with a weighted average PCI score of 63. The majority (65 percent) of the City's streets are in fair to good condition. However, a significant number of streets are in failed to poor condition (35 percent). The PCI score for the 2016 assessment was a 71, which is close to its OCI score of 72 for that assessment.⁴ Thus, in the last 7–8 years, the average quality of the City's network has declined from satisfactory to fair condition—an 11 percent decline. Since the last assessment in FY2016, Transportation has had a goal to keep the network quality at an average OCI score of 70. This goal has remained in place for the last 8 years, and according to Transportation, will remain so with a new goal PCI score of 70. To meet this goal, the department would have had to pave an average of 399 miles per year for the past 8 years, which includes slurry seal, asphalt overlay, concrete, and reconstruction. For every year that this goal was not met, the number of miles needed to be repaired increased. However, from FY2016 through FY2023, the department only repaired a total of 2,021 miles, for an average of only 253 miles per year, as shown in Exhibit 8. This total is approximately 1,168 (or 37 percent) miles short of the department's 3,189 desired mileage over the last 8 years.

⁴ This also demonstrates how PCI scores and OCI scores for a street network are typically similar. As described above, PCI scores make up 60 percent of the OCI score. The additional factor that is combined with PCI to generate the OCI is ride quality. Ride quality is heavily influenced by PCI, as a street with more defects will have a poorer ride quality as well.

Exhibit 8

From FY2016–FY2023, Transportation Repaired an Average of 253 Miles Per Year



Note: According to Transportation, completed mileage for FY2020 to FY2023 was lower than expected due to increasing repair costs, delays in several projects resulting from slurry seal bid protests, suspension of some slurry seal projects and staff shortages because of COVID-19, and the transfer of asphalt overlay projects from the Transportation Department to the Engineering and Capital Projects Department.

Source: OCA generated based on data from Transportation.

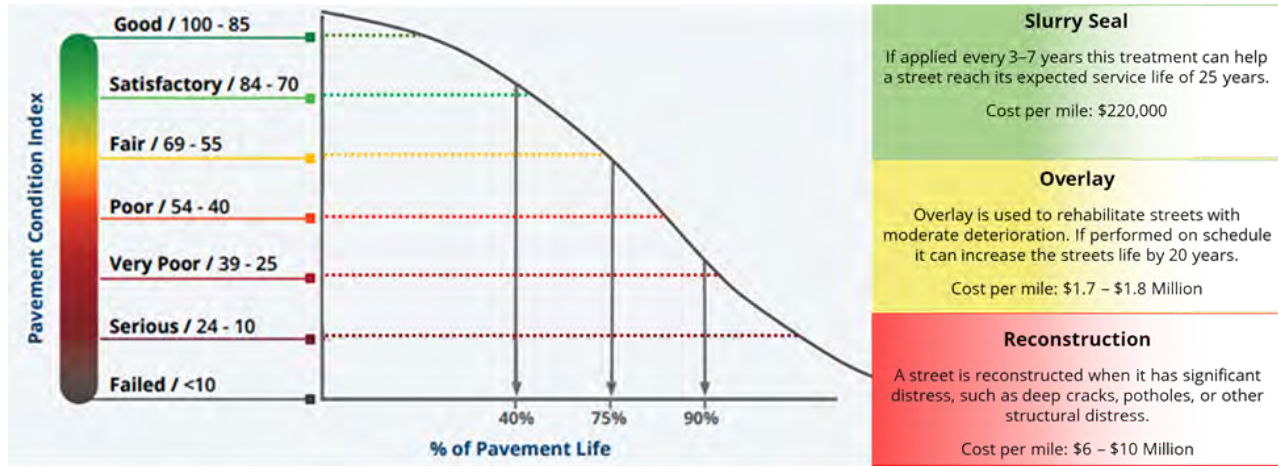
Preventative maintenance extends the lifespan of pavement and reduces costs.

Transportation stated that it uses a deferred cost savings approach, also known as a “best value approach,” for street maintenance. This strategy maximizes output given limited resources. It assumes that a street’s condition will deteriorate over time without maintenance. As a result, maintenance can be deferred until it gets to a certain deterioration level to avoid more expensive treatment. For example, a street would not be selected for slurry seal when its PCI score is a 95; it would be better to wait until it reaches a PCI score of 75, which could take 3–7 years depending on road conditions. Meanwhile, Transportation can focus on other streets that are closer to falling into more expensive repair categories.

The cost to repair a street is significantly less expensive when maintenance is applied to a street that is still in good condition, as discussed more in Finding 4 and shown in **Exhibit 9** below.

Exhibit 9

As Pavement Life Degrades Over Time, It Becomes More Expensive to Maintain or Reconstruct



Source: OCA generated based on Transportation’s FY2016 Pavement Condition Assessment staff report, the Performance Audit of the City’s Street Maintenance Functions, Transportation’s Pavement Management Plan, and an interview with Transportation.

Transportation uses its pavement management system and a variety of selection factors to prioritize streets that are selected for maintenance.

Transportation uses Cartegraph, its pavement management system, to inventory City streets and treatment histories, and to select streets for maintenance based on a variety of factors. Streets are selected based on established criteria, such as:

Prioritization Factors Used in Cartegraph:

- OCI (now PCI) score;
- Maintenance history;
- Functional classification;
- Proximity to emergency facilities, schools, tourist attractions, shopping centers; and
- Usage (average daily trips); and
- Part of the National Highway System.

Factors that Impact Priority:

- Treatment type needed (e.g., slurry seal, etc.);
- Cost of repair; and
- Available budget.

Other Factors Used to Refine the Selection of Streets:

- Community input; and
- Mayor/Council input.⁵

Cartegraph stores condition assessment data and can create several pavement management strategies and scenarios extending out many years.

Transportation also uses Cartegraph to model the deterioration curve of each street segment in the City's network. The system uses these curves to estimate the current condition of a street when a recent condition assessment is not available. Cartegraph's model uses these estimated conditions to determine which streets are set to be repaired or maintained. Cartegraph automatically updates the PCI scores of each street segment once maintenance activities like slurry seal are conducted and manually input into the system. Cartegraph stores condition assessment data and can create several pavement management strategies and scenarios extending out many years, contingent on various factors and strategy preferences.

Transportation uses several funding sources for street repair.

The budget for road repair in FY2024 is \$176 million.

In FY2023, Transportation's General Fund budget for the Street Division was \$68 million. In FY2024, the street maintenance budget was increased to approximately \$72 million, a 6 percent increase. The capital budget for road repair increased by an even larger amount—from approximately \$20 million in FY2023 to \$104 million in FY2024. In total, the budget for road repair in FY2024 is \$176 million, which includes pothole repair and minor mill and paves, in addition to slurry seals, asphalt overlay, and reconstruction.

Street maintenance activities like minor mill and paves, pothole repair, and dig-outs are primarily funded by Transportation's General Fund. Road repair projects like slurry seal and asphalt overlay for both maintenance and capital expenses, however, receive very little General Fund money and instead are primarily funded by the following revenue sources:

⁵ According to Transportation, while community, Mayoral, and Council input are considered, these are not factors that Cartegraph uses when selecting streets for maintenance.

- TransNet: used for traffic congestion relief, transportation improvements, and bikeway and pedestrian projects.
- Gas Tax/Road Repair and Rehabilitation Act (RMRA): collects revenue resulting from a State tax on the sale of gasoline. The funding generated is used to perform Citywide repairs and restoration to existing roadways, reduce congestion, improve safety, and provide for the construction of assets within the public right-of-way.
- Trench Cut fees: funded by street damage fees that are collected from excavators to recover the increased repaving and reconstruction costs incurred by the City because of trenching.
- Infrastructure Fund - The Infrastructure Fund was established by the City Charter, Article VII, Section 77.1 to be a dedicated source of revenue to fund General Fund infrastructure costs.
- Financing: usually bond financing that is decided by the Department of Finance, the Mayor's Office, and the City Executive Team.

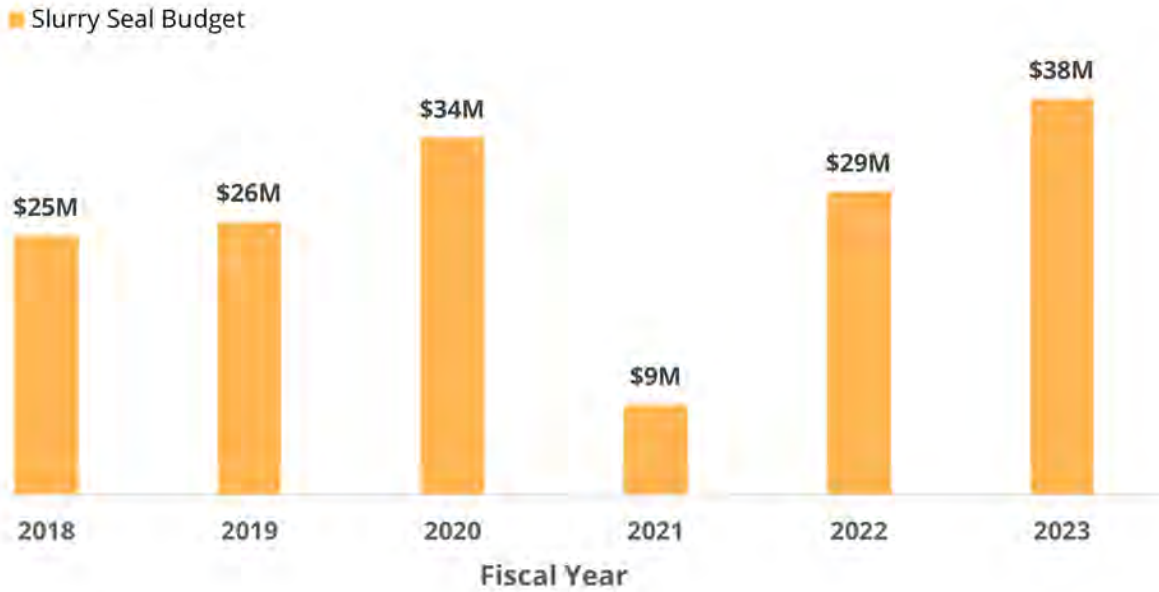
Funding levels do not usually increase because General Fund departments and/or activities must compete for these funds—which underscores the scarcity of funding for street maintenance.

According to the Independent Budget Analyst's Office, many of these funds provide important resources for General Fund services. This includes the items for traffic engineering support, street maintenance, and capital improvement program projects like asphalt overlay. Funding levels do not usually increase because General Fund departments and/or activities must compete for these funds—which underscores the scarcity of funding for street maintenance.

Over the years, funding for slurry seal and capital street projects has varied considerably. For slurry seal, as shown in **Exhibit 10**, annual budgets have varied from as low as \$8 million to as high as \$38 million from FY2018 to FY2023.

Exhibit 10

The Budget for the Slurry Seal Program Has Varied Considerably from FY2018 to FY2023



Note: These budget amounts do not reflect carry-forward amounts (continuing appropriations) from previous years.

Source: OCA generated based on review of data from SAP.

Over this same period, Transportation’s budget for capital street projects (overlay, reconstruction, concrete) has experienced the same large swings in budget. As shown in **Exhibit 11**, the budget has varied from a low of \$3 million in FY2022 to \$25 million in FY2019 and FY2021. Transportation’s FY2024 capital budget is \$104 million, a 420 percent increase from the FY2023 budget.

Exhibit 11

The Budget for Capital Street Projects (Overlay, Concrete, Reconstruction) Has Also Varied Considerably from FY2018 to FY2023



Note: These budget amounts do not reflect carry-forward amounts (continuing appropriations) from previous years.

Source: OCA generated based on review of data from SAP.

The Grand Jury recently reviewed the City’s street maintenance program and made several recommendations.

In June 2023, the San Diego County Civil Grand Jury released a report on the City’s Street Maintenance Program, titled “When Will My Street be Paved?”⁶ That report included 7 recommendations, including that the City should pass binding ordinances to dedicate consistent funds to the Street Maintenance Program and to fund a pavement condition assessment every four years; improve the street maintenance information provided on the City’s website; develop a 5-year Pavement Management Plan; and study whether to bring maintenance for street maintenance in-house.

⁶ [San Diego Grand Jury Report, “When Will My Street Be Paved?”](#)

In its response to the report, the City disagreed to the recommendations that a binding ordinance be passed to commit consistent funds to street maintenance and pavement condition assessments, stating that would limit the City's budgetary flexibility and ability to fund other high-priority items. The City agreed with all other recommendations and indicated several had already been implemented.⁷

Audit Scope and Objectives

Our audit covers similar issues as those reviewed by the Grand Jury, and also reviewed how the Street Maintenance Program manages unimproved streets as well as the overall capacity of the program to complete the repair mileage it is funded for. Our scope period reviews the City's street maintenance efforts from FY2018 through FY2023. Our scope includes the following objective:

Determine whether Transportation adequately plans for street maintenance to ensure that repairs are efficient, effective, and equitable.

- **Data Collection:** Evaluate whether Transportation collects, maintains, and uses accurate data when planning its street maintenance.
- **Funding:** Review how the City prioritizes funding for street maintenance and whether the department is funded to maintain its desired level of maintenance.
- **Prioritization:** Review whether Transportation prioritizes street maintenance based on best practices and accurate data.

⁷ [City's approved response](#) to the San Diego Grand Jury's Report, "When Will My Street Be Paved?"

Audit Results

The following sections include the findings and recommendations of our Performance Audit of the City's Street Maintenance Program. As noted above, the scope of this audit included the City's street maintenance activities from FY2018 through FY2023. During the scope period, Transportation did not have a 5-year pavement management plan, and thus many elements of the findings and recommendations in this report discuss the need for such a plan, and the essential elements that should be included in this plan.

Concurrently with our audit, Transportation was developing a 5-year pavement management plan, per recommendations from the San Diego County Grand Jury and requests from City Councilmembers. In addition, consistent with Government Auditing Standards, Transportation was provided with drafts of our findings and recommendations, both to assist with ensuring the accuracy of the report, and to facilitate Transportation's ability to respond to our recommendations. Many of our recommendations are consistent with the recommendations of the Grand Jury, and this report evaluates and makes recommendations in several additional areas as well.

In January 2024, Transportation published the City's first 5-year pavement management plan. **Our analysis of the new plan is located at the end of each finding section.** This analysis highlights areas where the new plan aligns with our recommendations and areas where further refinement of the plan and related items is needed to fully implement our recommendations. Overall, we found that the plan addresses the majority of the elements of our recommendations. Transportation agreed to fully implement all of our recommendations, and we will continue to review several areas where additional refinement in future iterations of the plan and related items are needed to fully implement our recommendations during our biannual Recommendation Follow-Up process.

Finding 1

The Transportation Department uses many best practices for prioritizing street maintenance; however, these practices should be reflected in a public and comprehensive 5-year pavement management plan to increase public transparency and accountability.

Finding Summary

The City of San Diego's (City's) street network continues to be a top priority among residents and City leaders. While the City is taking steps to reduce San Diegans' reliance on private vehicles for transportation, 80 percent of all trips will still be made by vehicles such as buses, private vehicles, rideshares, and taxis that use streets by 2035. As such, high quality streets will continue to be essential for a safe, predictable trip.

Valued at \$2.4 billion, the City's street network is one of its most valuable assets.⁸ As a major capital asset, City policymakers and residents should be informed of the City's street maintenance program and all aspects that pertain to its operation, such as program performance and trends, budget, street maintenance prioritization factors, long-term projects, and funding needs. These elements are critical to helping City leadership plan the program, determine and meet its needs, and set service-level expectations given limiting factors such as funding availability. With ever-increasing funding needs combined with decades of underinvestment (as discussed in Finding 4), it is critical that the City's Transportation Department (Transportation) develop a publicly presented, 5-year comprehensive pavement management plan to aid City leadership and residents on the future trajectory of the City's street maintenance program.

While Transportation has historically published several of the elements of a pavement management plan, they were not centralized. This finding discusses the elements of the plan that Transportation has or should report on and describes why each element is essential to provide City leadership and the public with the information they need to understand how the City's street maintenance program is performing. Without the plan, City leaders and residents cannot easily obtain a holistic view of the City's efforts to maintain its roads and the level of investment needed to maintain them. As a result, City leaders cannot fully anticipate future service levels, address or explain gaps in service, assess performance trends, and make informed, data-driven decisions on whether or how to adjust program performance to meet changing needs or circumstances.

⁸ This is the unaudited value of the City's roadways which does not include the value of other roadway infrastructure such as bridges, traffic signals, crosswalks.

Best practices recommend the creation of a comprehensive, long-term pavement management plan.

Several elements are critical for monitoring and informing the street maintenance program's current and future performance, asset condition and funding needs, and service levels. According to the Government Finance Officers Association, a comprehensive capital management plan that is annually updated focuses on aligning organizational resources to bridge the gap between present conditions and the envisioned future. This plan should be updated regularly and presented to elected officials and made available to the public during the annual budget review process. Such a plan for pavement management would provide the public and City leadership with perspective, accountability, and opportunity for input on the future trajectory of the street maintenance program.

A comprehensive long-term pavement management plan will better inform City leaders and residents of the City's efforts to maintain its roads and the investment needed to maintain them.

Prior to Transportation's publication of its pavement management plan in January FY2024, we found that Transportation had provided information on its pavement management activities piecemeal across various publications. A comprehensive long-term pavement management plan will better inform City leaders and residents of the City's efforts to maintain its roads and the investment needed to maintain them. It will also better allow City leadership to assess the performance of Transportation's street maintenance program and take informed action to alter the program's outcomes.

Based on our findings, best practices, and benchmarking, and as shown below in **Exhibit 12**, Transportation's pavement management plan should include the following elements:

Exhibit 12

Did the City Have These Elements Prior to Its Release of Its Pavement Management Plan in January 2024?

Pavement Management Plan Key Elements	Purpose	Did the City Have This Already?	Effect of Not Having Key Element
Program Overview	Consolidates key program information	Partially	City leadership and residents are uninformed of the program's overall budget and goals
Performance Goals/Trends	Showcases program's goals and progress made towards achieving these goals	Partially	City leadership and residents are uninformed about program's goals and achievements
Street Selection/Prioritization Factors	Informs the public on factors used to select streets for maintenance	Partially	City leadership and residents are uninformed as to how Transportation prioritizes streets for maintenance
Equity Goals/Trends	Displays equity goals and progress made towards achieving those goals	No	City leadership and residents are uninformed of program's efforts to address inequities in street maintenance
Long-Term Projects Listing	Establishes expectations as to where, when, and which streets will be paved	No	City leadership and residents do not know when to expect paving on their streets
Reasons Why Projects Are Delayed/Canceled	Provides context as to why projects are canceled/delayed and adjusts the public's expectations	No	City leadership cannot manage constituent's expectations when projects are inexplicably delayed/canceled

Note: Transportation's new pavement management plan, published in January 2024, includes most of these elements. Please refer to the Analysis of the 2024 Pavement Management Plan section at the end of this Finding.

Source: OCA generated based on review of other cities' pavement management plans, best practices from the Government Finance Officers Association, and various City documents including Transportation's adopted budgets, Budget Equity Guide, 5-Year Capital Improvement Program Outlooks, and the 5-Year Fiscal Outlooks.

Prior to the publication of Transportation's 5-year pavement management plan, we found that while Transportation had many of the elements listed in the table above, they were published in various documents rather than centralized in a comprehensive plan.

Many of the cities we benchmarked with have comprehensive pavement management plans.

Pavement management plans are not only a best practice; they are also employed by other jurisdictions we reviewed. We found that five cities we benchmarked against—Phoenix, Dallas, San Jose, Sacramento, and Long Beach—have long-term pavement management plans that include key elements of a multi-year plan. These elements comprise streets selected for maintenance over the plan’s duration, street selection criteria, department goals, and more, as shown in **Exhibit 13**. Some of these plans are also updated annually and presented to an oversight body.

Exhibit 13

Other Cities Have Pavement Management Plans That Include Several Key Elements

City	Program Overview	Performance Goals/Trends	Street Selection/Prioritization Factors	Equity Goals/Trends	Long-Term Projects Listed
Phoenix	✓	✓	✓	✗	✓
Dallas	✓	✓	✓	✓	✓
San Jose	✓	✗	✓	✗	✓
Sacramento	✓	✓	✓	✓	✗
Long Beach	✓	✓	✓	✗	✗

Source: OCA generated based on interviews and reviews of pavement management plans from the cities of Phoenix, Dallas, San Jose, Sacramento, and Long Beach website information.

Transportation reported its activities, funding, and program overview in various publications; however, this information had not been consolidated into a comprehensive pavement management plan.

We found that Transportation has reported its program information in a variety of City documents, rather than in a single comprehensive plan. This makes it difficult for the public and leaders to assess the street maintenance program’s performance. As shown in **Exhibit 14**, program information has been reported piecemeal in various

City documents that are published at different times. As a result, leaders must compare multiple documents to obtain a complete understanding of the street maintenance program’s operational, capital, and performance needs.

Exhibit 14

Transportation Has Reported Its Program Information in a Variety of City Documents

<p>Published in: January</p> <p>5-Year Capital Outlook:</p> <p>Capital needs for street maintenance</p> <p>Transportation’s targeted mileage goal of 468 miles per year to keep street network’s OCI score at 70</p>	<p>Published in: June</p> <p>Transportation Annual Budget:</p> <p>Program Overview</p> <p>Budget</p> <p>Performance Measures</p>	<p>Published in: November</p> <p>5-Year Financial Outlook:</p> <p>Operational needs for street repair and maintenance</p> <p>Forecasts for revenues and expenditures for upcoming service levels</p> <p>A planning tool related to the allocation of funds</p>
--	--	--



Source: OCA generated using the 5-Year Capital Outlook, 5-Year Fiscal Outlook, and Transportation’s Annual Budget.

A long-term, comprehensive pavement management plan will consolidate key program information into one document. It should, for example, compare the department's desired mileage to maintain its network goal with the goals that it is funded to meet. Specifically, the department's annual budgets do not distinguish between miles needed to achieve the City's desired Pavement Condition Index (PCI) goal of 70 (formerly OCI), funded miles, and targeted miles (miles the department can reasonably accomplish based on resources, etc.). As a result, the public and City leaders cannot easily determine whether completed miles meet some (or all) goals and whether those accomplishments work to achieve the City's desired network quality. A long-term, comprehensive pavement management plan should also provide information discussed in the following sections.

Consistent with best practices, Transportation uses its pavement management system to prioritize streets selected for maintenance and to design long-term maintenance strategies; however, prioritization factors should be included in a pavement management plan.

Transportation uses more priority factors than other cities we benchmarked with.

We found that Transportation has been using its pavement management system, Cartegraph, to prioritize streets for maintenance, consistent with best practices. Other cities we benchmarked with used a similar system to help them prioritize. Additionally, Transportation uses more priority factors than other cities we benchmarked with, as shown in Exhibit 15, to influence its pavement management strategies. Furthermore, best practices on capital planning from the Government Finance Officers Association state that a plan should be informed by current data and inventory. While Transportation regularly uses updated data in its planning process when possible,⁹ Transportation did not conduct a comprehensive pavement condition assessment for nearly 8 years until recently completing one in FY2024. Finding 3 discusses the need for more frequent comprehensive condition assessments.

⁹ Specifically, Transportation stated that its inventory system is updated at least weekly with work completed and automatically recalculates a street's PCI score (formerly OCI score). However, this only updates the condition of streets that have been maintained. In FY2024, Transportation switched to using the Pavement Condition Index (PCI) rating system from the Overall Condition Index (OCI) system.

Exhibit 15

The City of San Diego Uses More Prioritization Factors to Determine Which Streets to Schedule for Maintenance Compared to Other Benchmarked Cities

Prioritization Factors	City of San Diego	San Diego County	City of Chula Vista	City of Houston	City of Phoenix	City of Seattle	City of San Jose
Available budget	✓	✓	✓	✓	✓		✓
Community input	✓	✓	✓				✓
Cost of repair (e.g., treatment & materials)	✓		✓		✓	✓	
Equity (not a formal criterion)*	✓	✓	✓			✓	✓
Functional classification (e.g., road type – arterial, collector, etc.)	✓		✓				
Mayor/Council input	✓	✓					✓
Other City Departments/City Management	✓	✓	✓				
Pavement Condition (e.g., Overall Condition Index, Pavement Condition Score, Maintenance History)	✓	✓	✓	✓	✓	✓	✓
Proximity to emergency facility/school/tourist attraction	✓				✓		✓
Treatment type needed (e.g., slurry seal, etc.)	✓		✓		✓		
Usage/Traffic (average daily trips)	✓		✓	✓	✓	✓	✓

* The cities we interviewed used equity to select streets in several ways, including ensuring that a certain portion of pavement projects are completed in underserved communities and/or in Communities of Concern (Chula Vista & San Diego County, Seattle). The City of San Diego incorporated an equity factor in 2023 to its street selection tiebreaker criteria, which would consider a street's location within a census tract that is deemed eligible for Community Development Block Grant (CDBG) funds, in a Promise Zone, or located in a Community of Concern identified per the Climate Equity Index (very low, low, or moderate access to opportunity) as part of the prioritization score.

Source: OCA generated based on review of pavement management plans and/or interviews with the cities of San Diego, Chula Vista, Houston, San Jose, Phoenix, Seattle, and the County of San Diego.

Transportation's street prioritization factors, however, have historically not been published in one central place. For example, we found the prioritization factors listed in a staff report and in an interview with Transportation. These factors should also be described in the pavement management plan to inform City leaders and residents on how streets are selected for maintenance. Doing so will ensure that Transportation accounts for various factors in street selection that align with best practices and will allow policymakers to discuss whether and how the factors should change.

Additionally, Transportation uses its pavement management system, Cartegraph, to inform multi-year scenarios, which it uses to plan its annual street maintenance projects. However, these scenarios and potential strategies had not been publicly presented.

Transportation should report on its actual performance relative to its targeted, funded, and programmatic goals in its pavement management plan.

Reporting on Transportation's street maintenance program's goals and progress made towards those goals is important for several reasons. It informs City leaders and residents on the performance of its street repair program, explains gaps in performance, and allows leadership to make knowledgeable and data-driven decisions when weighing programmatic changes.

As mentioned earlier, we found that Transportation's budget, website, and the City's 5-year capital and fiscal outlooks contain some key performance metrics, goals, and objectives. However, these items had not been in one central place to allow policymakers to make informed decisions regarding the street maintenance program's performance. Additionally, Transportation had not consistently reported on its actual performance relative to its programmatic and funded goals.

According to Finance and Transportation, the street maintenance program has three types of performance goals:

- **Programmatic Goal Miles:** The number of miles needed to be completed each year to maintain the City's street network in good condition for a PCI score of 70. This goal has been inconsistently reported in Transportation's annual budget documents.
- **Funded Miles:** The number of miles Transportation is actually funded to achieve. From FY2016–FY2020, the funded miles also represented targeted miles. However, beginning in FY2021, Transportation changed its targeted miles in its budget documents to reflect goals that it can reasonably achieve, according to the Department of Finance. While this goal was also reported in Transportation's annual budget documents (because it was the same as the programmatic goal), the distinction between programmatic goals and funded goals was not clearly stated in these documents. However, Transportation's FY2024 budget now shows the programmatic goal and notes that it is a goal to maintain the asset's service level and is not necessarily based on budgeted staff and resources.

- **Targeted miles:** The number of miles Transportation believes it can reasonably accomplish in a given year based on various capacity factors including staffing constraints and funding availability. While this goal is also reported in Transportation's annual budget documents, the documents do not specifically state that this goal is based on Transportation's capacity, and the reason for switching from programmatic goal miles to targeted miles based on capacity was not explained in the budget documents.

Transportation is maintaining the street network at a slower pace than needed, which leads to a lower average PCI score for the street network.

Transportation should demonstrate its actual performance relative to its programmatic mileage goals in its pavement management plan to inform City leaders and the public on its progress towards achieving its street network condition goals. We found that while Transportation has intended to maintain the street network in good condition with a PCI score of 70 since the last FY2016 pavement condition assessment, progress has been slower than intended. For example, to maintain the PCI score of 70, Transportation would have needed to pave an average of 399 miles per year, for an approximate total mileage of 3,189. However, the department has only completed 2,021 miles or 63 percent of this total. With an average pace of 253 miles completed per year in this same timeframe, it would take another approximately 5 years to repair the rest of the necessary street mileage, for a total of nearly 13 years.¹⁰

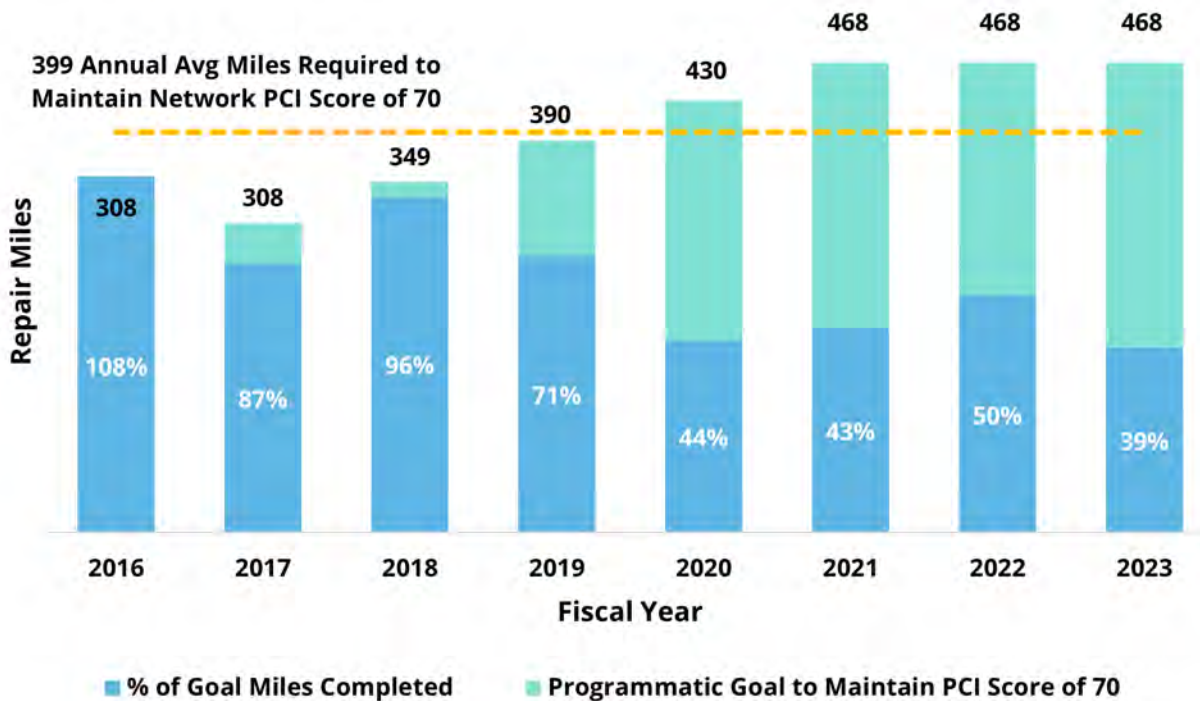
Transportation has set programmatic mileage goals from FY2016 to FY2023 to help it maintain the City's street network in good condition with a PCI score of 70.¹¹ However, as shown in **Exhibit 16**, with the exception of FY2016, Transportation has not met its mileage goals from FY2017 to FY2023. Additionally, it has not met the average number of miles—399—that needed to be completed each year.

¹⁰ This calculation is based on the total number of miles completed from FY2016 to FY2023—2,021—divided by 3,189 (average of 399 miles per year for 8 years) which equals approximately 63 percent of the network repaired over the last 8 years. At an average pace of 253 miles completed per year over that same time period, it would take approximately 4.6 more years to complete the rest of the necessary mileage (which is approximately 3,000 miles).

¹¹ The Department of Finance stated that the goals have increased due to carryover miles that were not completed in prior years.

Exhibit 16

Transportation Needed to Pave an Average of 399 Miles Per Year to Maintain the City’s Street Network at an Average PCI Score of 70; However, It Has Not Met Its Mileage Goals in 7 Years



Notes:

*Since FY2015, the City has had a goal to maintain the City’s street network in good condition, with an average PCI score of 70 (formerly OCI goal of 70).

**Programmatic mileage goals include carryover miles—miles that were intended to be completed in prior years but were not due to various reasons. Similarly, miles completed in a particular fiscal year likely include miles funded in prior years.

***According to the City, completed mileage for FY2020 to FY2023 was lower than expected due to increasing repair costs, delays in several projects resulting from slurry seal bid protests, suspension of some slurry seal projects and staff shortages because of COVID-19, and the transition of asphalt overlay projects from the Transportation Department to the Engineering and Capital Projects Department.

Source: OCA generated based on data from Transportation and Transportation’s annual budget documents

Transportation's targeted mileage goals do not align with its programmatic goal to maintain the City's street network in good condition, effectively ensuring that the department will not achieve its street condition goals.

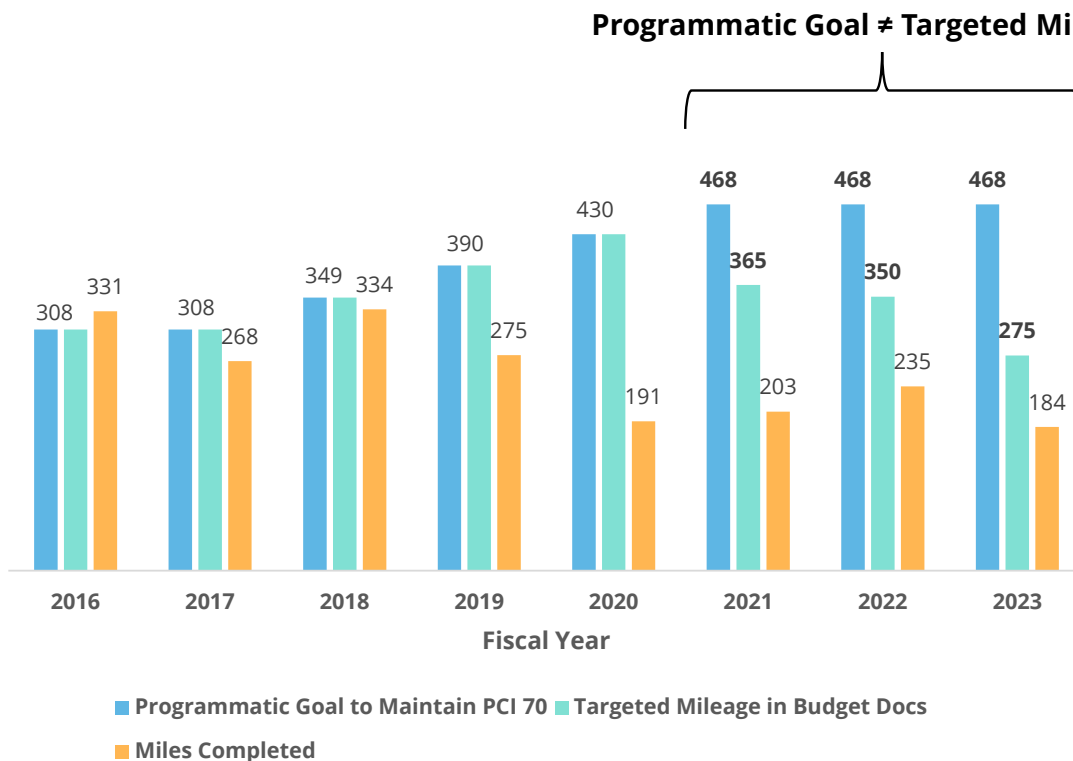
FY2023 had the lowest number of miles repaired—184—of any of the last 8 years.

We found that Transportation's targeted mileage goals do not align with its programmatic goal to maintain the street network in good condition at an average PCI score of 70.¹² Specifically, from FY2021 to FY2023, the department's programmatic goal has been to pave 468 miles per year; however, its targeted mileage specified in the department's annual budget documents has been consistently below this number. As shown in **Exhibit 17**, from FY2021 to FY2023, due to insufficient funding and the deterioration of the street network, Transportation's targeted mileage goals have been below the number of miles needed each year to maintain the City's street network in good condition. Additionally, the exhibit also shows that beginning in FY2020, actual mileage completed relative to programmatic, funded/targeted goals steeply declined—from 275 miles in FY2019 to 235 miles per year or less from FY2020 through FY2023. FY2023 had the lowest number of miles repaired—184—of any of the last 8 years.

¹² In FY2024, Transportation switched to from using the Overall Condition Index to the Pavement Condition Index (PCI) rating system.

Exhibit 17

Transportation’s Targeted Mileage Goals Have Been Below the Mileage Needed in Recent Years, from FY2021 to FY2023, to Maintain an Average OCI Score of 70; It Also Has Not Met Its Targeted Mileage Goals



Notes:

* Since FY2015, the City has had a goal to maintain the City’s street network in good condition, with an average PCI score of 70 (formerly OCI goal of 70).

**From FY2016 to FY2020, the targeted miles also represented funded miles. As of FY2021, targeted miles represent the number of miles Transportation believes it can reasonably achieve, according to the Department of Finance.

***Programmatic mileage goals and targeted mileage goals for FY2016 to FY2020 include carryover miles—miles that were intended to be completed in prior years but were not due to various reasons. Similarly, miles completed in a particular fiscal year likely include miles funded in prior years.

****Mileage goals represent combined miles for slurry seal, overlay, reconstruction, and concrete.

*****According to the City, completed mileage for FY2020 to FY2023 was lower than expected due to increasing repair costs, delays in several projects resulting from slurry seal bid protests, suspension of some slurry seal projects and staff shortages as a result of COVID-19, and the transition of asphalt overlay projects from the Transportation Department to the Engineering and Capital Projects Department.

Source: OCA generated based on data from Transportation and Transportation’s annual budget documents.

We also found that the budget documents did not clearly differentiate between funded miles and targeted miles. Therefore, it has been difficult for City leaders and the public to discern whether Transportation's funded mileage aligns with its programmatic mileage goals.

A pavement management plan should discuss reasons why Transportation's pace is slower than expected.

The street maintenance program's pace of delivery is multifaceted. According to Transportation, the program's pace should ideally reflect delivery of miles that were funded in the same fiscal year. In other words, miles funded should equal miles completed for a given fiscal year. However, it does not actually work this way in practice. Transportation stated that inconsistent funding and annually approved budgets limits its ability to plan and expend its budget in the year that the budget is approved. The lead time for contracting and design, from 12 to 18 months, which cannot begin until the budget is approved in June of each year prior to the start of the fiscal year on July 1st, means that actual repairs cannot begin until after that time. As a result, Transportation stated that while funded miles are eventually completed, these miles are accounted for in subsequent fiscal years' tallies. Similarly, Finance and Transportation stated that uncompleted funded miles are carried forward into the program's goals for future years, making it difficult to parse out previously funded and programmatic goal miles from the goals set for individual fiscal years.¹³ As a result, it is challenging to assess the street maintenance program's performance using this measure of pace. However, the street maintenance program's output, as shown in the exhibits above, shows that completed mileage has nevertheless fallen below the program's various goals and declined sharply beginning in FY2019.

Completed mileage has fallen below the program's various goals and declined sharply beginning in FY2019.

While Transportation's budget documents briefly explain some of the reasons for the declines in performance, they do not provide a more detailed explanation for declines in performance relative to street treatment type. Transportation and the Engineering and Capital Projects Department stated that the street maintenance program's pace of delivery has been affected by two factors—inconsistent funding and capacity issues. Both departments stated that, as detailed more in Finding 5, the street maintenance program has been

¹³ OCA could not find, and neither Transportation nor Finance could provide support for, actual funded and carryover mileage per year.

Declines in overlay mileage output were greatly affected by the transition of asphalt overlay projects from Transportation to the Engineering and Capital Projects Department in FY2021.

underfunded and inconsistently funded for many years. Capacity issues, such as the City's small pool of contractors who conduct slurry seal and overlay work, limit how much work they can complete. Other capacity issues, as detailed more in Finding 5, include fewer slurry seal miles for FY2020 to FY2023 because of increasing repair costs, delays in several projects resulting from slurry seal bid protests, and COVID-19-related delays, such as suspension of some slurry seal projects and staff shortages. Declines in overlay mileage output were likely also affected by the transition of asphalt overlay projects from Transportation to the Engineering and Capital Projects Department in FY2021. A pavement management plan will centralize the reasons and explain them alongside the department's multi-year performance trends. In Finding 5, we also recommend that the City include the strategies it is using to address street maintenance productivity and capacity issues in the pavement management plan.

The Government Finance Officers Association recommends that agencies monitor and communicate progress towards stated goals and reassess goals based on changes in external factors, such as the national or regional economy, demographic changes, and statutory changes. In a pavement management plan, Transportation should explain gaps in its street maintenance program's performance. By displaying its funded mileage relative to its programmatic mileage in a pavement management plan, Transportation will also inform City leaders and the public on how its funding level is not sufficient to meet its programmatic ideal, as discussed more in Finding 4. This information will also set realistic expectations—that no matter the ideal, the limited funding for street maintenance and the underperformance relative to both the funded and programmatic mileage goals are not sufficient to maintain the street network in good condition. Furthermore, such information could help Transportation build a case for finding a dedicated funding source to help it achieve its—and the public's—desired street network quality. Additionally, adding targeted mileage that the department believes it can reasonably achieve based on available resources will give leaders a better sense of Transportation's actual capacity to meet its many goals.

Transportation should report on its progress towards achieving the City's equity goals.

While we found that Transportation takes an equitable approach toward street maintenance, its results are not necessarily equal. Transportation planning decisions can have large and diverse equity impacts. Transportation equity recognizes that the ultimate goal of

Transportation has engaged with the Department of Race and Equity to develop and incorporate equity factors into its prioritization process as of FY2024.

most travel activity is access to services and activities, and that many factors affect accessibility, including vehicle travel, the quality of non-automotive transportation modes, transport system connectivity, development density, and affordability.

Transportation has engaged with the Department of Race and Equity to develop and incorporate equity factors into its prioritization process as of FY2024. These equity factors have been added to the existing street selection tiebreaker criteria, which would consider a street's location within a census tract that is deemed eligible for Community Development Block Grant (CDBG) funds, in a Promise Zone, or located in a Community of Concern identified per the Climate Equity Index (very low, low, or moderate access to opportunity) as part of the prioritization score. Applying an equity lens allows for analyzing the City's streets and communities through identified disparities and increases means to determine equity as both an outcome to aim for, and into a practice for how departments can collaborate, operate, and serve.

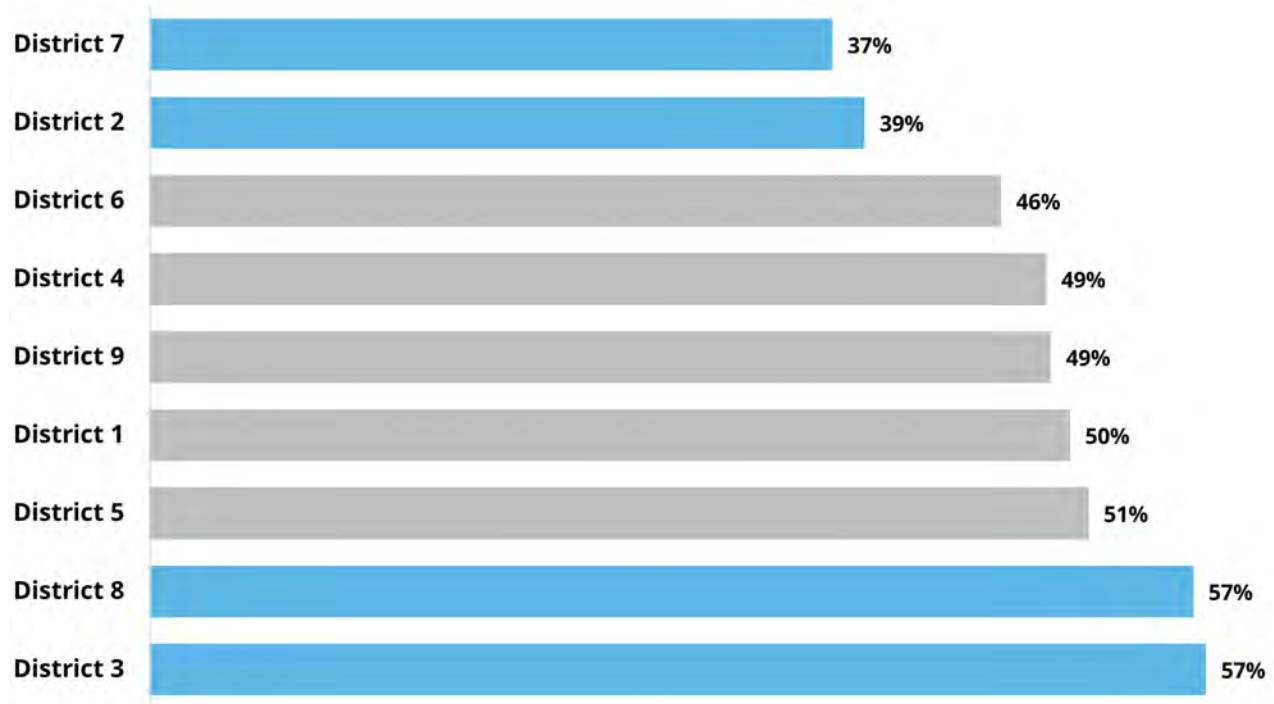
Transportation does consider equality when determining which streets to maintain. For example, like some other cities we benchmarked with, Transportation considers location, Council District, and Mayoral and Council input (including community input) as factors, in addition to the other factors mentioned earlier. Transportation stated that it also considers the number of road users by road type or vehicle trips in its selection criteria. According to Transportation, the Department of Race and Equity identified this metric as the most important criterion for considering equity in street maintenance because it accounts for users of all backgrounds who traverse certain roads to get to where they live or work.

We observed disparities in the percentage of miles repaired by Council District over the last five years.

However, we also observed disparities in the percentage of miles repaired by Council District over the last five years, from FY2018 to FY2023, which ranged from 37 percent to 57 percent. We found significant variations between Council Districts. For example, Council Districts 2 and 7 are at the lower end of this range, with 39 and 37 percent of their street networks repaired, respectively, while Council Districts 3 and 8 had 57 percent of their networks repaired, as shown in **Exhibit 18**.

Exhibit 18

Transportation Repaired at Least 37–57 Percent of Each Council District’s Street Network from FY2018–FY2023, but Some Districts Had Much Higher Percentages Than Others; However, Districts 2 and 7 Had Considerably Lower Percentages of Miles Repaired

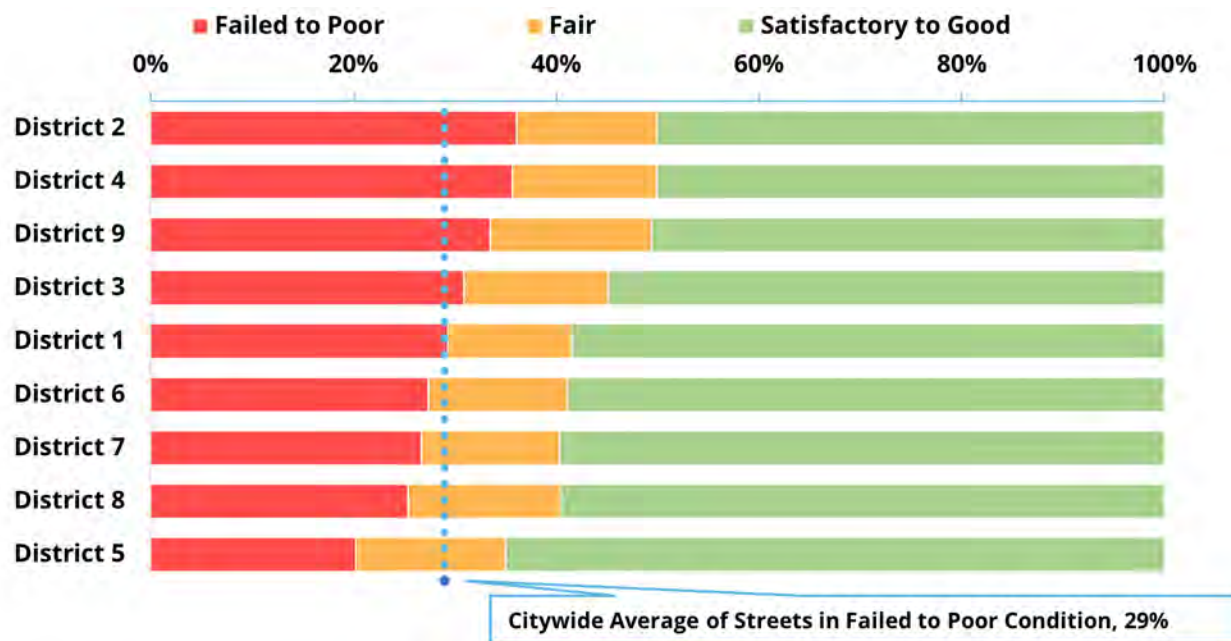


Source: OCA generated based on data provided by Transportation.

These results are also reflective of the fact that the best value approach prioritizes streets in better condition for maintenance. While this is the best way to preserve and enhance the PCI of the City’s network with limited resources, it can also lead to streets in worse condition not being selected because those streets need much more expensive maintenance. For example, District 2 has the highest percentage of roads in failed to poor condition, 36 percent, but at the same time had among the lowest percentage of its streets maintained, 39 percent, as shown in **Exhibits 19 and 21** below. One reason for this is likely that because District 2 has a lower percentage of streets in relatively good condition, it thus has fewer streets the best value approach will prioritize with limited funding. Importantly, Transportation stated that percentage of miles repaired among Council Districts will never be perfectly equal because each district has different sized networks made up of different types of streets in various conditions.

Exhibit 19

Districts 2 and 4 Have a Higher Percentage of Streets in Poor Condition Than the Average Percentage of Streets in Failed to Poor Condition Citywide

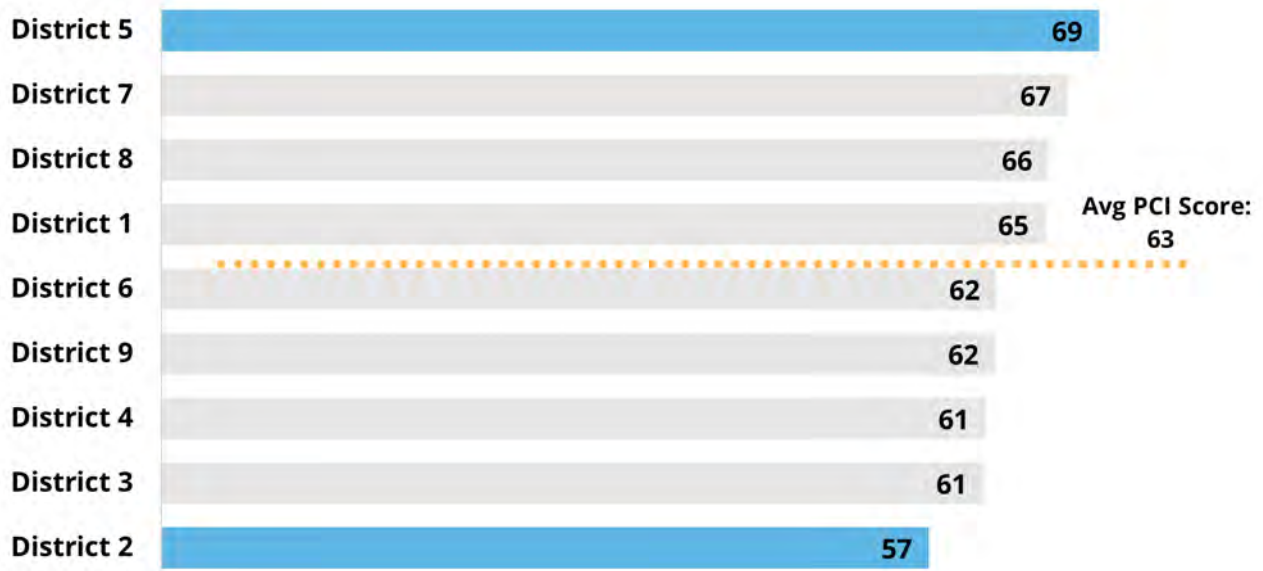


Source: OCA generated based on data from the FY 2024 condition assessment provided by Transportation.

Although the entire street network is in fair condition, we also found significant differences in PCI scores between Council Districts 2 and 5, as shown in **Exhibit 20**. While both are approximately 10 percent above and below the Citywide network average PCI score of 63, Council District 5’s PCI score of 69 is 21 percent higher than District 2’s.

Exhibit 20

While All Council Districts are in Fair Condition, District 5’s Average PCI Score is 21 Percent Higher Than District 2’s PCI Score (FY2023)



*Data reflects each Council District’s new condition based on Transportation’s recent completion of its pavement condition assessment in November 2023. This dataset uses Transportation’s new Pavement Condition Index (PCI) scores.

Source: OCA generated based on data provided by Transportation.

The best value approach and limited funding likely explain why some of the repair trends and PCI scores among Council Districts do not necessarily align.

A summary table of each Council District’s average PCI score, percentage of miles in failed to poor condition, and percentage of miles repaired from FY2018 through FY2023 is displayed in **Exhibit 21** below.

Exhibit 21

Average PCI Score, Percentage of Miles in Failed to Poor Condition, and Percentage of Miles Repaired by Council District

Council District	Average PCI Score	% of Miles in Failed to Poor Condition	% of Miles Repaired
1	65	29%	50%
2	57	36%	39%
3	61	31%	57%
4	61	36%	49%
5	69	20%	51%
6	62	27%	46%
7	67	27%	37%
8	66	25%	57%
9	62	33%	49%
Average	63	29%	48%

Source: OCA generated based on data provided by Transportation.

We found several takeaways from our review of these trends. First, we observed that the percentage of networks maintained does not necessarily correlate with each Council District’s PCI score. For example, District 7 had one of the lowest percentages of its network maintained, 37 percent, and yet it has the second highest PCI score of 67. Similarly, Districts 4 and 9 had nearly 50 percent of their networks repaired from FY2018 to FY2023 and both have network PCI scores of 61 and 62, respectively, which is just below the Citywide average of 63.

One of the most significant differences we observed is with Council Districts 2 and 5. District 2 has the lowest PCI score of 57, a high percentage of roads in poor condition (36 percent) and had the second to lowest percentage of its network repaired from FY2018 to FY2023. In comparison, District 5 has the City’s highest PCI score of 69, the lowest percentage of roads in poor condition (20 percent) and had over 50 percent of its roads repaired during this time period.

These trends are likely a result of Transportation’s best value approach, combined with limited funding, which mostly prioritizes using slurry

From FY2018 through FY2023, 76 percent of miles repaired were slurry seal miles.

seal because it is a preventative maintenance treatment that is the least expensive treatment and because Transportation has a consistent funding source—Road Maintenance and Rehabilitation Act funds—for slurry seal. In fact, from FY2018 through FY2023, 76 percent of miles repaired were slurry seal miles. While this is a cost-effective approach in the short term, as discussed more in Finding 4, it is only more expensive in the longer term. With limited funding, the model in Cartegraph likely prioritizes slurry seal treatment. However, there will likely be fewer streets to slurry as time goes on because more and more streets will slip into poorer condition, which is more expensive to repair.

Furthermore, Districts with the highest percentages of roads in good to fair condition will likely continue to see their street networks improve, or deteriorate at a slower rate, because more of their streets are available for slurry seal treatment. In other words, District 5 has 65 percent of its streets in satisfactory or good condition (i.e., PCI score of 70 or above), making it more likely that these roads will continue to receive further slurry seal treatment. Conversely, District 2 will likely receive fewer slurry miles because only 50 percent of its network is in satisfactory or good condition.¹⁴ As a result, the significant percentage of its network that is in poor condition will continue to deteriorate, especially at a faster rate due to the exponential deterioration rate that occurs once a street's PCI score falls below 70.

Transportation has historically only planned street maintenance in 1-year increments.

Transportation's road repair website now reflects long-term planning and Transportation has updated the website with its newly published 5-year pavement management plan.

We found that because Transportation has historically only planned street maintenance in 1-year increments, its interactive streets.sandiego.gov website did not reflect a long-term plan. As the City's central repository for street resurfacing information, the website is intended to be the online portal for residents to search and view street maintenance projects that affect their street and/or neighborhood. However, with late planning and the absence of long-term planning, residents and City leaders could not anticipate future projects. Consistent with our finding, the San Diego Grand Jury identified a similar issue in its June 2023 report, "When Will My Street Be Paved?" It also noted that the website was difficult for users to find and did not contain all street segments or even whole neighborhoods.

¹⁴ Streets with a PCI score below 70 are generally not eligible for slurry seal.

Concurrently with the publishing of its Pavement Management Plan in January 2024, Transportation also posted its plan on its department website and an associated five-year listing of street repair projects on its streets.sandiego.gov website.

Reasons why projects or segments are cancelled or delayed are now included in Transportation's Pavement Management Plan and on Transportation's website; Transportation should provide contact information for the public to inquire about changes in scheduling.

Councilmembers have expressed the need for the creation of a rolling 5-year work plan that will inform the public as to when the City will repair their streets.

In the absence of a comprehensive plan, City leaders and the public have been unaware of the reasons why projects or street segments may be delayed or removed from the planned project listing on Transportation's website. Some Councilmembers' offices have expressed to OCA that it is difficult to manage constituents' expectations about when their streets will be repaired when projects are inexplicably delayed or cancelled. Similarly, an FY2023 memo from some Councilmembers to the Mayor's Office expressed the need for the creation of a rolling 5-year work plan that will inform the public as to when the City will repair their streets. While the delay or cancellation of entire projects is less common than the delay or removal of individual street segments within those projects, Transportation stated that these issues can occur for several reasons. For example, projects or segments may face delays or cancellations due to funding deficits, inclement weather, contracting delays, and changes in treatment type upon inspection. Some cities we benchmarked with, including San Jose and Phoenix, include a disclaimer on their websites noting that project schedules can change for the same reasons Transportation mentioned. They also provide contact information for those who may have questions. As part of its updated streets.sandiego.gov website, Transportation has posted a similar disclaimer. However, it should also post contact information for residents to reach the department with questions regarding changes in the street repair schedules.

Recommendations

In order to ensure that the Pavement Management Plan is updated regularly and includes all essential elements, we recommend:

Recommendation 1.1

(Priority 1)

The Transportation Department (Transportation), in consultation with the Mayor's Office, Chief Executive Office, and/or other relevant departments, should develop a comprehensive 5-year pavement management plan to provide public transparency over the City's street maintenance practices. Transportation should include the following reporting elements in the plan:

- a. Program overview;
- b. Street selection prioritization factors;
- c. Listing of planned projects over 5 years, including the type of maintenance that is planned (slurry, overlay, etc.) that is updated annually;
- d. Reasons why projects or segments were postponed or cancelled;
- e. Performance goals, including but not limited to, the number of miles needed to reach its target PCI goal, the number of miles planned and completed, trends over at least the last 3 years, and any explanations regarding deviations from the goal;
- f. Goals and performance trends on addressing equity; and
- g. Any other information Transportation deems essential.

The Transportation Department should update and present the plan to the Active Transportation and Infrastructure Committee and/or the City Council as part of its annual budget request. The pavement management plan should be presented alongside the funding strategy described in Recommendation 4.1.

Management Response: Agree [See full response beginning on page 93.]

Target Implementation Date: First Quarter of FY2026, to be updated annually thereafter

Recommendation 1.2

(Priority 2)

The Transportation Department should include a disclaimer on the Streets.SD website regarding reasons why street maintenance projects may be cancelled or postponed and provide contact information for residents to obtain additional information about why a specific street maintenance project or segment was cancelled or postponed. Additionally, Transportation should include its pavement management plan on its department website.

Management Response: Agree [See full response beginning on page 93.]

Target Implementation Date: July 2024

Recommendation 1.3

(Priority 1)

The Transportation Department (Transportation) should develop a new Standard Operating Procedure that requires the development and completion of a 5-year pavement management plan. This procedure should also set forth the requirement for the plan to be presented annually to the Active Transportation and Infrastructure Committee and/or the City Council, and provide specific guidance regarding information that should be contained in the plan. The procedure should require that all the information listed in Recommendations 1.1 and 1.2 be included in the pavement management plan, in addition to any other information that Transportation believes is essential.

Management Response: Agree [See full response beginning on page 94.]

Target Implementation Date: July 2024

Analysis of 2024 Pavement Management Plan

Concurrently with this audit, the Transportation Department developed and published its 5-Year Pavement Management Plan (PMP) in January 2024. In our brief review of the new plan, we found that the new Pavement Management Plan generally addresses many elements of our recommendations, but certain improvements are still needed, as follows:

- Inclusion of a program overview;
- Listing of street selection prioritization factors, including new equity criteria that will be incorporated into the planning process in FY2024;
- Creation of a 5-year listing of planned projects that is referenced in the PMP and listed on the Streets.SD website;
- Inclusion of an explanation on the Streets.SD website and in the PMP for reasons why project or street segment schedules may be postponed or cancelled;
- Identification of a new programmatic mileage goal and budget needed for over the next 10 years to achieve the department's desired Pavement Condition Index score of 70;
- Explanations of actual and potential reasons why street maintenance repair has been inconsistent in the past and may be in the future; and
- Description of trends in street repair history and budget, variances in pavement condition index scores over the last three condition assessments for fiscal years 2011, 2016, and 2023 on the network overall, by condition categories, street type, and by Council District.

The plan was also presented to the Active Transportation and Infrastructure Committee in January 2024. While the plan includes many of the elements in Recommendation 1.1, it currently lacks trends towards equity goals and trends towards implementing the department's chosen funding scenario and associated pavement management strategy. As a result, OCA will continue to keep open Recommendation 1.1 to review subsequent updates to the PMP for future trends and to ensure that the PMP is presented to the Active Transportation and Infrastructure Committee and/or City Council annually as part of its budget request.

In addition, OCA will follow up to verify that Streets.SD.gov provides contact information for residents to obtain additional information about why a specific street maintenance project or segment was cancelled or postponed. Therefore, OCA will also keep open Recommendation 1.2.

In addition, to codify and ensure that the pavement management plan is produced annually and includes all essential elements, Transportation still needs to complete the Standard Operating Procedure outlined in Recommendation 1.3.

Finding 2

The pavement management plan should also capture Transportation's efforts to address unimproved streets and alleys.

Finding Summary

Addressing historical inequities in the City of San Diego's (City) programs and services, including in street maintenance operations, has become a focal point among City leaders and residents in recent years. Unimproved streets and alleys, as shown in **Exhibit 22**, are typically streets that are dirt, gravel, or paved, and are not built to modern City standards. These streets represent another important area of inequity that the City has recently begun to address.

Exhibit 22

An Unimproved Street in Southeastern San Diego



Source: Image obtained from the San Diego Union Tribune.

Specifically, for over 70 years, a service level disparity has existed between residents who live along unimproved streets and alleys and are financially responsible for upgrading them and residents who live along improved streets that are maintained by the City.¹⁵ In FY2021, City Council approved an updated Council Policy to allow unimproved streets and alleys to become eligible for City funding. However, we found that while Transportation has developed a prioritization process to rank unimproved streets and alleys for funding and intends to ask for a dedicated funding source for these streets in FY2025, it is in the process of identifying and developing a strategy to on how to address unimproved streets and alleys. Until all of the City's nearly 62 miles of unimproved streets and alleys are improved to City standards and incorporated into the City's street network, this disparity among residents will continue to exist.¹⁶

Including a strategy on unimproved streets and alleys in the pavement management plan recommended in Finding 1 will provide transparency to City leaders and the public on the City's plans for prioritizing these streets—which have not been part of the street maintenance program—and allow them to be considered relative to the program's larger needs and goals. It will also give context to the difficulty in prioritizing unimproved streets and alleys. Specifically, unimproved streets and alleys present a unique situation for City leaders to address because of the inherent contradiction to Transportation's best value approach—addressing equity is not efficient in the long run. City leaders must balance the significant costs to improve an unimproved street—from an estimated \$20 million to \$60 million per mile—with Transportation's best value approach, which prioritizes maintaining streets before treatment cost increases.¹⁷ City leaders must also consider other elements, such as the City's limited funding for street maintenance, the drive to meet service level goals, and the cost of deferring maintenance, which only becomes more expensive in the future, as discussed in Finding 4. While it is not OCA's position to determine the best course of action, establishing a strategy to address unimproved streets and incorporating this strategy in to the PMP will give City leaders the information they need to monitor the appropriateness and effectiveness of the strategy chosen.

15 According to Transportation, they do grade these streets for drainage, minor asphalt repair, and access on an as-needed basis.

16 The 62 miles of unimproved streets and alleys represent approximately 2 percent of the City's overall street network of 3,000 centerline miles.

17 The high cost to improve unimproved streets varies greatly because it is based on site-specific considerations, including encroachments, drainage, accessibility, right-of-way limits, utilities, and environmental constraints.

Addressing unimproved streets and alleys is important for improving mobility equity.

Addressing inequities in street maintenance is important for ensuring that all residents have a safe and reliable street network to access activities and locations that meet a variety of mobility needs. Equity refers to the fairness with which impacts (benefits and costs) are distributed. Mobility-based planning has typically favored the needs of those who drive over those who cannot, should not, or prefer not to drive. However, mobility equity realizes that the goal of most travel activity is to access services and activities. Mobility equity also recognizes many factors that affect accessibility, including vehicle travel, the quality of non-automotive modes such as walking, transport system connectivity, development density, and affordability.

City officials have recently begun to address historical inequities presented by unimproved streets and alleys by allowing them to become eligible for City funding.

In light of mobility equity, the City and Transportation have developed mobility equity goals within its Strategic Plan and budget, respectively, to increase mobility access for all residents. Additionally, City officials have recently begun to address historical inequities presented by unimproved streets and alleys by allowing them to become eligible for City funding like other City assets via a change to Council Policy 200-01 in FY2021.¹⁸ This change is intended to gradually eliminate the financial responsibility on abutting property owners of unimproved street and alleys as more of these streets are improved using City funds. These streets and alleys will ultimately be absorbed into the street maintenance program and maintained by the City like other improved streets.

The City contains 38 miles of unimproved streets and 24 miles of unimproved alleys. As shown in **Exhibit 23**, Council Districts 4 and 8 have the highest number of miles of unimproved streets and alleys compared to other districts, and these streets and alleys represent a larger portion of their overall street network. While unimproved streets and alleys represent approximately 2 percent of the City's overall road network, residents living and working along these streets experience hazards that residents along paved streets do not, such as mudslides during rainy weather, dust storms, and dirt inhalation.

¹⁸ In 1952, City Council approved a resolution to prevent City forces from working on unimproved streets and alleys. The resolution only allowed City crews to work on unimproved streets when dust conditions become "unbearable" to neighboring residents, or unless a minor improvement will result in a reduced maintenance cost to the City. In 1979, Council codified this resolution into Council Policy 200-01, which affirmed the City's level of responsibility for dirt streets and required that abutting property owners maintain them. These streets were also not eligible to receive City funding like other City assets.

Exhibit 23

Most Unimproved Streets Are in Districts 4 and 8

Council District	Miles of Unimproved Streets/Alleys	% of District's Street Network
4	15	5.24%
8	14	5.01%
2	11	2.45%
3	8	2.64%
9	6	2.20%
1	5	1.27%
5	2	0.59%
6	1	0.33%
7	<1	0.18%
Total	62	2%

Source: OCA generated using data received from Transportation.

Transportation has taken steps to develop a strategy to address unimproved streets and alleys.

One of the goals of the City's street maintenance program is to ensure a safe and reliable street network. As part of this goal, Transportation has taken steps in its 2024 Pavement Management Plan to develop a strategy to address unimproved streets and alleys, which includes developing a prioritization process to rank unimproved streets based on several factors and creating long-term scenarios on how to incrementally fund the improvement of unimproved streets and alleys. Other steps are discussed in more detail in our Analysis of 2024 Pavement Management Plan section at the end of this finding.

In the long run, bringing unimproved streets and alleys up to City standard has several benefits, including:

- Establishing a consistent level of service for residents regardless of their community of residence;
- Removing abutting property owners' financial responsibilities associated with upgrading and driving on unimproved streets;
- Increasing public safety, drainage, accessibility, and mobility as streets are incorporated into the City's street maintenance program; and

Bringing unimproved streets and alleys up to City standard has several benefits.

- Bringing unimproved streets into the City's street network, thus ensuring the City's Pavement Condition Index score accurately reflects the quality of the entire street network.

Transportation's strategy to address unimproved streets and alleys will have to account for the significantly higher costs of addressing these streets and alleys compared to the costs of maintaining the rest of the street network.

Improving one mile of an unimproved street is estimated to cost approximately \$20 million to \$60 million.

The strategy should be developed to account for some of the significant differences between unimproved streets and alleys and improved streets. Specifically, Transportation stated that improving one mile of an unimproved street is estimated to cost approximately \$20 million to \$60 million, or up to 10 times more than reconstructing an improved street in poor condition at approximately \$6 million per mile. The high cost varies greatly because it is based on site-specific considerations, including encroachments, drainage, accessibility, right-of-way limits, utilities, and environmental constraints. Additionally, Transportation stated that unimproved streets and alleys have longer design times than improved streets. Whereas improved streets take approximately 12–18 months to design, unimproved streets and alleys can take 2–4 years.

Given that the street maintenance program's estimated funding needs for improved streets are approximately \$1.9 billion over the next 10 years (from FY2025 to FY2034), addressing unimproved streets must be carefully weighed in this context. For example, to improve all 62 miles of unimproved streets and alleys at the low-end cost of \$30 million per mile equates to approximately \$1.9 billion—close to Transportation's estimated costs needed to repair existing improved streets over the next 10 years.

The creation of a dedicated funding source to improve unimproved streets and alleys could be used to improve them while keeping their maintenance needs separate from improved streets.

With the street maintenance program's limited funding and no dedicated funding source, improving unimproved streets and alleys could significantly increase future deferred maintenance costs overall. With only \$645 million in identified funding over the next 10 years, FY2025 to FY2034, or approximately \$65 million per year, improving 2–3 miles of unimproved streets and alleys at \$20 million each would nearly consume this budget. The creation of a dedicated funding source to improve unimproved streets and alleys could be used to improve them incrementally over time while keeping their maintenance needs separate from improved streets.

Transportation's efforts to address unimproved streets and alleys have historically not been reported in a central place.

Because of unimproved streets and alleys' different status from improved streets—part of the City's right-of-way but not built to modern design standards and not maintained by the City as part of the street maintenance program—they have not been included in Transportation's prioritization process for street maintenance. According to the Government Finance Officers Association, a capital asset management plan should include key elements, such as the condition of a program's assets, current and desired service levels, and funding needs.

Transportation's annual budget documents did not provide any information on unimproved streets and alleys.

As we found in Finding 1, Transportation had reported information on its pavement management activities piecemeal across various publications, but not in one central place. We found this to be the case with unimproved streets and alleys as well. We only found staff reports from FY2020 to FY2021 that discussed unimproved streets and alleys, primarily in relation to City Council's efforts to approve the change in Council Policy 200-01 to allow unimproved streets and alleys to be eligible for City funding. Importantly, we found that Transportation's annual budget documents did not provide any information on unimproved streets and alleys, which would allow these streets to be considered in context of the larger street maintenance program and its goals.

Including unimproved streets and alleys in the pavement management plan will allow City leaders to consider them with respect to the needs and goals of the street maintenance program.

Including basic information on unimproved streets and alleys and strategies on how to improve them as part of the pavement management plan will:

- Centralize the information on both unimproved and improved streets to provide City leaders with complete context of the entire street network;
- Inform City leaders and the public of Transportation's progress towards its equity goals;
- Provide context for reasons why progress on improving these streets may be slow or difficult;
- Provide reasons why progress to improve these streets may be slow or difficult, particularly in context to the needs of the larger street maintenance program; and
- Provide transparency to the public and manage its expectations.

Recommendation

To ensure that the City clearly articulates a strategy to address unimproved streets and alleys and to provide opportunities to revisit this strategy if additional funding becomes available, we recommend:

Recommendation 2.1

(Priority 1)

The Transportation Department, in consultation with the Department of Race and Equity, the Mayor's Office, and other stakeholders, should develop a strategy on how to address unimproved streets and alleys, such as whether and how to bring them up to City standard, and include this strategy in the pavement management plan. For example, Transportation could include in its pavement management plan some of the following options and/or others to address unimproved streets and alleys:

- a. Develop an incremental plan to bring these streets up to City standard, such as targeting a certain number of miles or number of streets to complete each year;
- b. Create a dedicated funding source specifically to address unimproved streets and alleys; and
- c. Continue to treat unimproved streets and alleys as outside the City's network and address them as funding becomes available.

The Standard Operating Procedure recommended in Recommendation 1.3 should require that pavement management plan incorporate the City's strategy for unimproved streets and alleys.

Management Response: Agree [See full response beginning on page 94.]

Target Implementation Date: July 2024

Analysis of 2024 Pavement Management Plan

Concurrently with this audit, the Transportation Department (Transportation) developed and published its 5-Year Pavement Management Plan (PMP) in January of FY2024. In our brief review of the new plan, we found that per our recommendation, Transportation has worked with the Department of Race and Equity to develop equity factors into the street selection process for the improvement of unimproved streets and alleys. This selection process ranks unimproved streets and alleys based on several factors, such as the following:

- The number of residents served by the unimproved street or alley;
- Safety considerations, such as whether the unimproved street or alley is in a flood zone;
- Whether the unimproved street or alley limits other services being provided to residents (e.g., trash pickup, street sweeping, etc.); and
- Whether the unimproved street or alley is located in a census tract that is deemed eligible for Community Development Block Grants, in a Promise Zone, or in a Community of Concern identified per the Climate Equity Index (very low, low, or moderate access to opportunity).

The PMP states that Transportation is requesting a separate, dedicated funding source for the improvement of unimproved streets and alleys starting in FY2025. It also proposes several strategies on how to incrementally improve unimproved streets and alleys over time and the associated costs of these strategies.

OCA will keep open Recommendation 2.1 to review further progress towards a desired strategy on how to address unimproved streets and alleys and the creation of a Standard Operating Procedure that incorporates the other elements of our recommendation.

Finding 3

To ensure an optimal and cost-effective pavement management plan, the City should conduct regular pavement condition assessments.

Finding Summary

Pavement condition assessments are a critical component of a comprehensive asset management plan. They inform a wide variety of asset management and capital planning decisions, including characterizing current conditions; projecting future conditions; and developing timing, cost, and budget of treatment recommendations. Pavement condition assessments, when paired with continuously updated pavement inventory, can allow for City of San Diego (City) leadership to make data-driven decisions to support an efficient street maintenance program.

As discussed in Finding 1, we found that the Transportation Department (Transportation), in accordance with best practices, uses the results of its condition assessments to monitor conditions and plan maintenance as efficiently as possible given limited resources. However, although the department's goal is to conduct a street condition assessment every 4 years, Transportation did not conduct an assessment for more than 7 years.

Without regular condition assessments, the data—and the model that Transportation's pavement management system uses to select streets for maintenance—becomes less reliable over time. As a result, Transportation could not ensure that streets were maintained as efficiently as possible, and was not fully aware of the condition of all City streets and how its maintenance program was affecting the overall street network.

Although pavement condition assessments should be performed regularly, the City did not complete a pavement condition assessment for more than 7 years.

Pavement condition assessments should be performed regularly to update the PCI scores of each street and the City's street network. According to the Federal Highway Administration, an effective pavement management system depends on reliable, accurate, and complete information. Having quality pavement management data is directly linked to the ability of the pavement management system to contribute to the development of reasonable and reliable recommendations and decisions regarding an agency's pavement network.

Assessments are essential to Transportation's ability to minimize the total lifecycle cost of streets while providing the required level of service.

In addition, the Government Finance Officers Association states that periodic street condition assessments are a key element of capital planning that guides programming and funding of a multi-year asset management plan. These assessments are essential to Transportation's ability to minimize the total lifecycle cost of streets while providing the required level of service. Transportation has a goal to conduct a pavement condition assessment every 4 years. By having an inventory of streets and information on those streets' current condition, Transportation can make data-supported decisions on the maintenance and capital projects needed to most efficiently achieve established service levels.

Transportation requested funding for a condition assessment, but the prior Administration did not provide it, leading to a yearslong delay and causing existing street condition data to become unreliable.

We found that the City did not complete a condition assessment for more than 7 years, from FY2016 to FY2024. Transportation did submit a funding request in FY2020 for a pavement condition assessment; however, the previous administration denied this request due to other competing funding priorities. According to the Department of Finance (Finance), funding decisions for condition assessments and other City priorities are policy decisions made by the Mayor, the City Council, and the City's Executive Team. The current Administration funded Transportation's request for a new pavement condition assessment, which was recently completed in FY2024.

If Transportation had updated its condition data in FY2021, it could have potentially spent its street maintenance budget of approximately \$180 million more efficiently over the last three years.

If Transportation had updated its condition data in FY2021, it could have potentially spent its street maintenance budget of approximately \$180 million more efficiently over the last three years (FY2021–FY2023). This is important because each street's PCI score—a rating on its quality—is a major factor that influences whether and when a street is selected for maintenance and the type of treatment to be performed. However, Transportation stated that as the data becomes more outdated, the modeling that Cartegraph—Transportation's pavement management system—performs becomes less accurate. This means it cannot select the most optimal streets and types of maintenance for each street to support an efficient street maintenance plan.

The actual condition of the City’s overall street network is significantly different than the estimates Cartegraph used prior to the completion of a new street condition assessment.

Cartegraph was using significantly inaccurate data to plan street maintenance work, likely for several years.

According to Transportation, regular condition assessments are vital to its maintenance planning process. Specifically, the assessments help Cartegraph create updated deterioration curves for each street, which the system uses to estimate the condition of streets in between assessments. However, two years after an assessment, the margin of error in the deterioration curves grows and the predicted degradation of each street becomes less accurate. Over time, Cartegraph’s estimated condition of the street network moves farther from the true quality of the street network. With the results of the new condition assessment, we found this situation to be the case. The new street network average PCI score of 63 is 13 points above Cartegraph’s predicted average score of 50.^{19; 20} While this is good news overall—the overall condition of the street network is not as deteriorated as estimated—it means that Cartegraph was using significantly inaccurate data to plan street maintenance work, likely for several years. In addition, it means that prior estimates of the cost to achieve the City’s PCI goal of 70 were likely inaccurate as well. Because Transportation’s model has been using the best value approach for years—an approach that focuses on repairing streets that are close to slipping into a condition that requires more expensive and expensive repair—the significantly inaccurate PCI estimates likely led to inaccurate funding needs estimates.

Inaccurate street condition data likely resulted in Cartegraph selecting suboptimal lists of streets for maintenance for the past several years.

Inaccurate data likely led Cartegraph to select non-optimal streets for maintenance.

When Cartegraph has accurate data on street conditions, it can generate the most optimal list of streets to maintain given a limited budget. However, large disparities between the estimates Cartegraph has been using in recent years and the actual condition of City streets means that the system likely did not select streets for maintenance in a way to maximize the effectiveness of the \$180 million the City allocated

¹⁹ The estimates in Cartegraph use OCI scores, while the new condition assessment uses PCI. As described in the background, OCI and PCI use very similar methodologies, and PCI actually makes up the majority of the OCI model. For example, Transportation provided data from the FY2016 assessment that showed the OCI score of the network at that time was 72, while PCI was 71. While the difference between OCI and PCI may explain some portion of the differences between Cartegraph’s estimated OCI score and the actual PCI scores found in the FY2024 assessment, it would not explain the magnitude of the differences we found.

²⁰ Overall street network condition scores are weighted by the surface area of each street.

to street maintenance from FY2021 to FY2023.

Looking at estimated scores for individual street segments, which is what Cartegraph uses to plan maintenance, versus the actual scores for those segments from the FY2024 assessment, underscores this point. While the condition of the City’s overall street network is 13 points higher than Cartegraph had estimated, Cartegraph’s estimates were off by 26 points or more for about one quarter of street segments, as shown in **Exhibit 24**. This makes it likely that many streets were selected for maintenance at the wrong time, while many other streets that should have been maintained may not have been selected at the right time.

Exhibit 24

Cartegraph’s Condition Estimates Were Off by 26 Points or More for One Quarter of Streets

Estimated to Actual Score Changes	Percent of Total Streets	Notes
Score Improved by 76–100	1%	For 21% of streets, actual street conditions were at least 26 points higher than Cartegraph estimated
Score Improved by 51–75	4%	
Score Improved by 26–50	16%	
Score Improved by 11–25	26%	
Score Improved by 1–10	21%	
No Sig. Difference Between Estimated and Actual Score	2%	
Score Decreased by 1–10	16%	
Score Decreased by 11–25	10%	
Score Decreased by 26–50	4%	For 5% of streets, actual street conditions were at least 26 points lower than Cartegraph estimated
Score Decreased by 51–75	1%	
Score Decreased by 76–100	0%	

Source: OCA generated based on analysis of Cartegraph estimated OCI data and the actual PCI scores from the FY2024 assessment.

Transportation adjusts the planned maintenance list when estimates vary from actual conditions, but this is inefficient and still likely results in suboptimal maintenance plans.

It is important to note that while the inaccurate scores likely led to Cartegraph generating suboptimal lists of streets for maintenance, Transportation stated that it inspects the selected streets before beginning work to ensure that the street needs the maintenance Cartegraph has prescribed. For example, if Cartegraph selects a street based on an estimated score of 72 (which is the optimal time to apply slurry seal to raise the PCI of the street as more expensive overlay treatment is needed once the street falls below a score of 70) and Transportation sees the street is actually in much better condition, it will adjust the plan to select a more appropriate street. Conversely, if Transportation finds the street is actually a 60, it will cancel the slurry seal project, update the score in Cartegraph, and the street will be eligible to be selected for overlay at some point in the future.

Changes to the list of streets planned for maintenance causes confusion and frustration for stakeholders.

While this is a good practice to have in place, it is inefficient, and would not account for streets that Cartegraph did not select but should have. In addition, as discussed in Finding 1, changes to the list of streets planned for maintenance causes confusion and frustration for stakeholders.

While best practices and Council Policy 800-16 stress the importance of regular condition assessments, the City does not require them.

The City does not have any policies that require regular condition assessments for streets. However, its Council Policy 800-16—which establishes overall guidelines and plan steps for asset management—states that periodic condition assessments are part of an asset management program. The Council Policy, however, stops short of specifying when these assessments should occur, who should perform them, and how they should be delivered.

Recent recommendations call for regular condition assessments.

In FY2023, two reports recommended that the City conduct regular pavement condition assessments. In March 2023, the Independent Budget Analyst's Office (IBA) noted in its report that that the City lacks condition assessment standards or guidance to ensure consistency for the City's facilities and pavement. As a result, the IBA recommended that the Enterprise Asset Management Steering Committee lead

development of condition assessment standards as a priority to be accomplished in the near term.

Similarly, the San Diego Grand Jury recommended in its June 2023 report on the City's street maintenance program that the City should dedicate more consistent funding—via an appropriations ordinance—to ensure pavement condition assessments are conducted every 4 years. In its proposed response, the Mayor and Council agreed with this recommendation. However, they cannot legally implement it because requiring future Councils to expend funds in a specific way every 4 years limits the ability of the City's current and future decisionmakers to appropriately respond to future funding needs. Instead, the City Council will consider adopting an ordinance or a Council Policy that encourages the performance of a pavement condition assessment every 4 years that is subject to budgetary appropriation, as long as it allows for a majority of Council to waive the requirements. Further analysis will be conducted to determine the most appropriate legal vehicle for City Council's consideration.

Other cities we benchmarked with recognize the value of regular pavement condition assessments.

Our benchmarking analysis with other cities indicates that it is prudent to conduct regular pavement condition assessments to ensure accurate condition data. In our research, most of the cities we benchmarked against—Phoenix, Dallas, Houston, Los Angeles, Chula Vista, and Seattle—conducted condition assessments every 2–3 years. San Jose and Sacramento assess a portion of their networks each year. Both Chula Vista and Houston noted the cost-effectiveness of doing so, especially when the condition assessments themselves cost up to approximately \$500,000. According to the City of Houston, it is ideal to regularly update the street condition data and to have as many data points as possible to influence a street's degradation curve.

Pavement condition assessments are a cost-effective way to ensure efficient future road repair planning and should be prioritized.

Regular pavement condition assessments are a critical investment in the future of the City's street network. In light of the City's limited resources and increasing cost to repair each mile, as discussed in Findings 1 and 4, it is especially important to conduct regular pavement condition assessments to ensure that the City is efficiently investing in the maintenance of the City's street network. With pavement condition

assessments costing approximately \$500,000, conducting one equals an investment of \$167 per mile. This \$167 per mile investment ensures that the \$220,000 to \$6 million the City spends per mile of maintenance results in the greatest benefit for the City's street conditions.

Recommendation

To ensure that the City conducts a pavement condition assessment every 4 years in accordance with best practices, we recommend:

Recommendation 3.1

(Priority 1)

The Transportation Department (Transportation) should include a goal in its pavement management plan, as referenced in Recommendation 1.1, to conduct pavement condition assessments at least every 4 years to ensure that it is using the most accurate and current information when selecting streets for maintenance. The Plan should also indicate when the last condition assessment was conducted and when the next assessment is scheduled to be completed. Additionally, Transportation's Standard Operating Procedure, as referenced in Recommendation 1.3, should include the intent to prioritize and initiate a funding request for the pavement condition assessment every 4 years as part of Transportation's budget request. (Priority 1)

Management Response: Agree [See full response beginning on page 95.]

Target Implementation Date: July 2024

Analysis of 2024 Pavement Management Plan

Concurrently with this audit, the Transportation Department developed and published its 5-Year Pavement Management Plan (PMP) in January of FY2024. In our brief review of the new plan, we found that per our recommendation, Transportation has included a goal in its plan to request budget for a pavement condition assessment every 4 years. The plan included analysis of trends from the last three pavement condition assessments which were conducted in 2011, 2016, and 2023. Based on the most recent pavement condition assessment, Transportation has included in its plan a recommended funding scenario with street maintenance strategies designed to achieve its desired Pavement Condition Index score in the next 10 years.

OCA will keep open Recommendation 3.1 to review future progress towards requesting budget for the next pavement condition assessment and creation of the Standard Operating Procedure to incorporate Transportation's intent to initiate a pavement condition assessment every 4 years.

Finding 4

A long-term funding strategy is essential to ensure that the City has sufficient funding to achieve its street condition goals.

Finding Summary

As discussed in Findings 1, 2, and 3, we found that while a long-term pavement management plan that includes unimproved streets and more consistent condition assessments are needed, the Transportation Department (Transportation) generally uses its limited street maintenance resources effectively.

However, we found that the City lacks a long-term funding strategy for street maintenance. As a result, the City will not achieve its goal of a Pavement Condition Index (PCI) score of 70 at existing or moderately increased funding levels. We found that Transportation's street maintenance program has insufficient and unpredictable funding and that even recent efforts to increase funding are not enough to address the approximately \$1.9 billion need over the next 10 years (FY2025 through FY2034) to achieve the City's PCI score goal. In fact, the most realistic scenarios show that the condition of the City's streets are likely to get worse. Furthermore, reliance on the General Fund and special revenue funds that compete with other City assets for funding is not sustainable. Ultimately, without a funding strategy and a dedicated funding source, the quality of the street network will continue to decline, and deferred maintenance costs will increase. Additionally, because the City's PCI score of 63 is lower than the statewide average of 65, costs to San Diego drivers are likely to be higher than the statewide average of \$808 per driver—in the form of additional vehicle repairs, accelerated vehicle depreciation, and increased fuel consumption and tire wear. The longer the City and residents wait to invest more money into the City's street network, the more all will pay in the future.

We found that Transportation does not have a funding strategy or a dedicated funding source. With the current increased policy and monetary focus on street maintenance, a funding strategy would complement the long-term plan, including a plan to address unimproved streets, and regular condition assessments as discussed in Findings 1, 2, and 3. This strategy should assess the long-term implications of various funding scenarios to improve transparency to City leadership and the public. The strategy should also explore options for seeking a dedicated funding source that will help Transportation maintain its roads at its desired service level as efficiently as possible. Continuing to fund street maintenance at suboptimal levels will only further increase costs to achieve a PCI of 70 in the future.

Funding needs for street maintenance are substantial and will continue to increase as maintenance is deferred; the overall quality of the street network will also decline.

Transportation estimates that the funding gap for street maintenance is \$1.2 billion over the next 10 years.

Transportation anticipates that it needs to spend approximately \$1.9 billion in the next 10 years to fully fund its capital and operational needs for road repair to achieve a PCI score of 70. However, it has only identified \$645 million in projected funding based on current allocation, leaving a gap of \$1.2 billion.²¹ With the City's network having declined approximately 11 percent in the last 8 years—from a previous network average PCI score of 71 in FY2016 to the new PCI score of 63—and insufficient funding for the foreseeable future, the quality of the network will continue to decline until a dedicated funding source or significantly increased funding is allocated.

While Transportation generally uses its limited resources effectively, deferring street maintenance ultimately increases taxpayers' costs over time.

As discussed in Findings 1 and 3, Transportation generally uses its limited resources effectively. For example, Transportation uses a best value first approach by employing a variety of treatment types and strategies to repair streets in varying conditions to prevent them from requiring more costly repairs. For example, Transportation stated will apply less expensive fog and crack seals to streets in good condition before they need slurry seal, or it will overlay streets in fair condition before they need a significantly more costly reconstruction. Additionally, we found that Transportation uses its condition assessment data to set program goals and to influence its model in Cartegraph when selecting streets for maintenance. While these strategies are most efficient given limited resources, underfunding the street maintenance program is ultimately more costly in the long run.

Underfunding the street maintenance program is ultimately more costly in the long run.

Furthermore, inconsistent year-to-year funding has significant ripple effects, not just for Transportation, but for other City departments as well. For example, Transportation stated that it and the Engineering and Capital Projects Department never know how much staffing they will need each year to accomplish the work they have been funded for. Transportation also stated that inconsistent funding affects the Purchasing and Contracting Department's ability to hire contractors in a timely manner, especially since Transportation's annual budget is

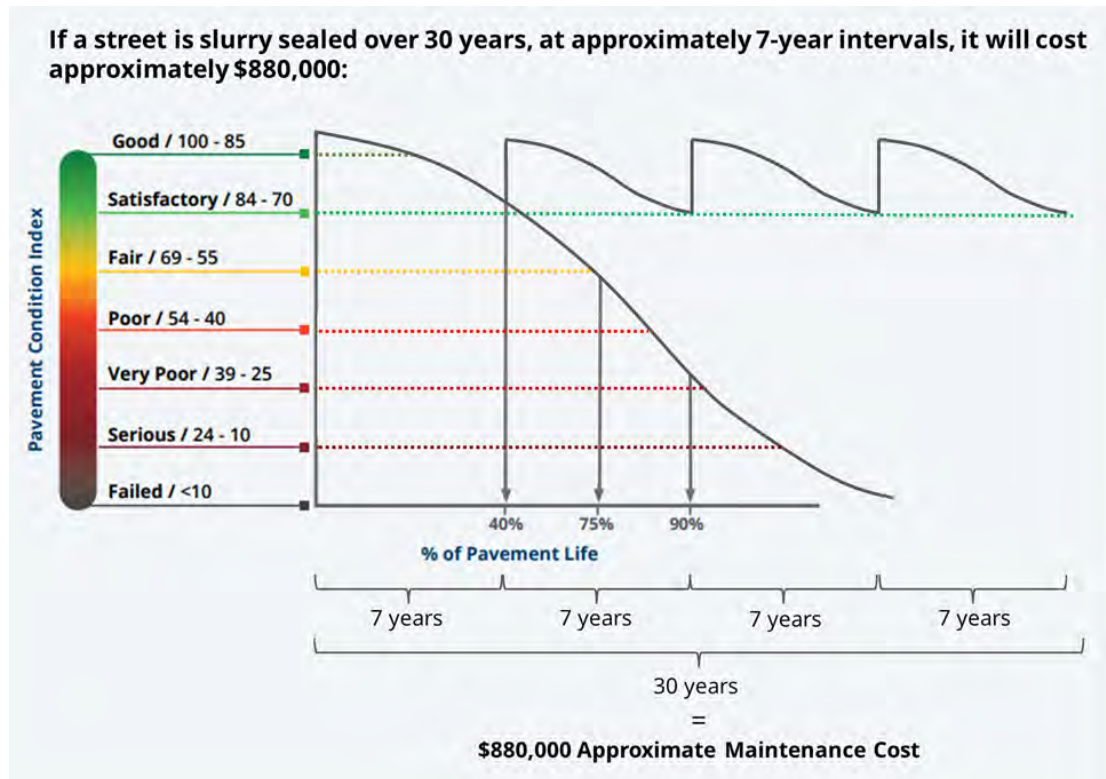
²¹ According to Transportation, very little General Fund money goes towards road repair for operations and capital costs.

approved so close to the beginning of the next fiscal year. Furthermore, it precludes steady relationships with the City’s already limited pool of contractors who book their time with other cities as they wait for the City’s annual allocation for street maintenance, a sentiment also expressed by the Engineering and Capital Projects Department, as mentioned in Finding 5. The resultant contract and project delays likely further increase project costs as inflation also rises and streets’ conditions worsen. Lastly, using a best value approach only defers maintenance into the future, which will require more expensive and extensive repairs as streets deteriorate.

Reconstructing a street in poor condition is 27 times more expensive than maintaining a street that is already in good condition.

In fact, reconstructing a street in poor condition is 27 times more expensive than maintaining a street that is already in good condition.²² A street’s repair cost increases exponentially with delayed maintenance as its PCI score decreases below 70. In **Exhibit 25**, three scenarios demonstrate how street maintenance becomes more expensive over 30 years as it is deferred.

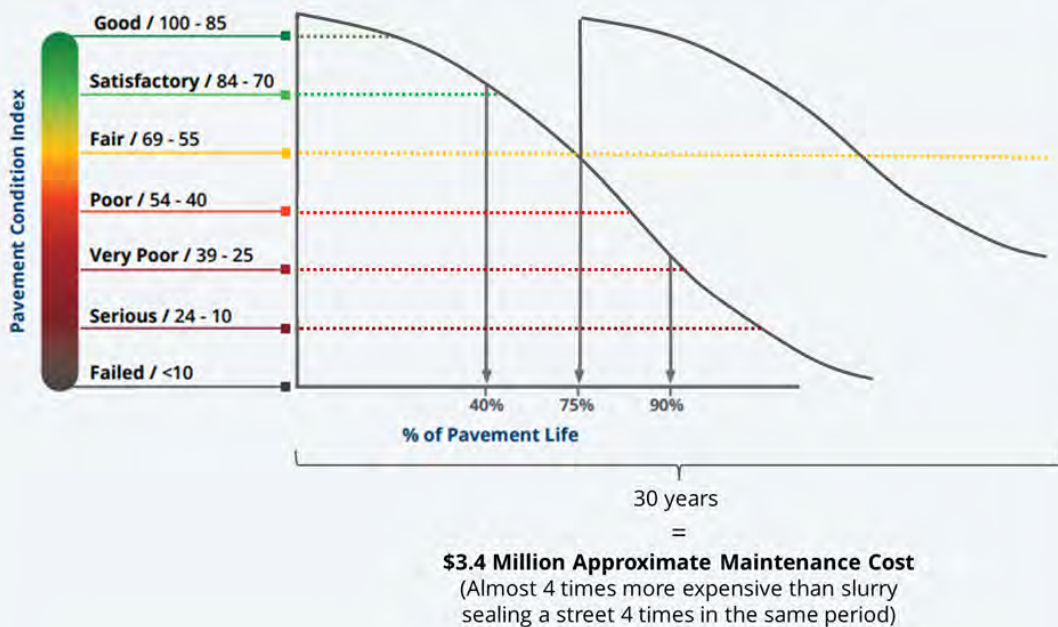
Exhibit 25



Note: Slurry seal treatments can increase a pavement’s life by 3 to 7 years depending on various factors including weather, use, and traffic loads.

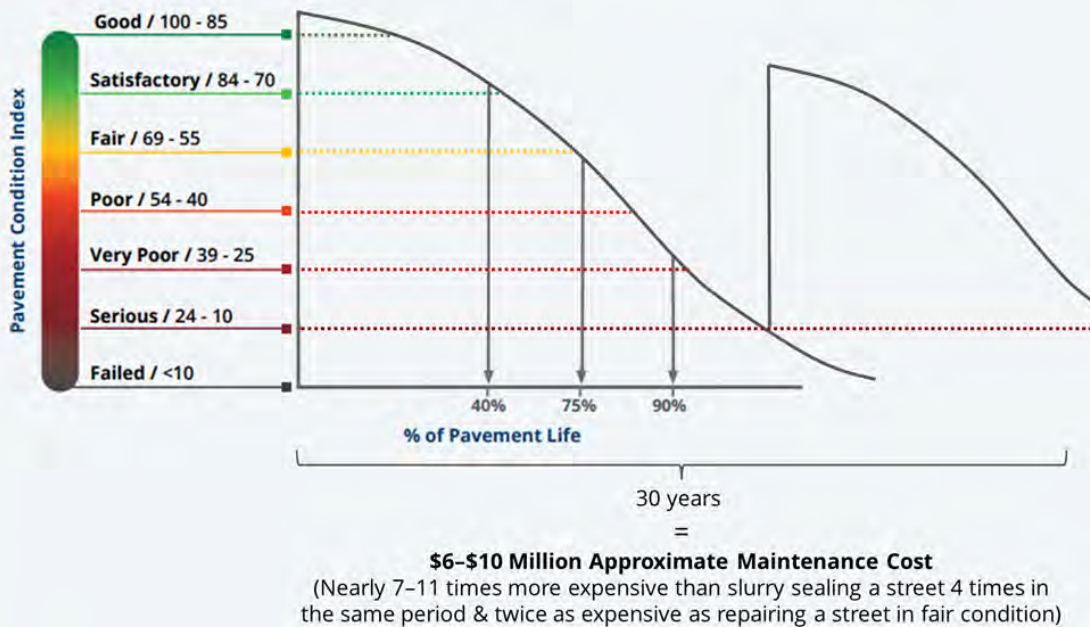
²² 220,000 per mile of slurry divided by \$6 million for reconstruction.

Deferring maintenance until a street is in fair condition will cost approximately \$3.4 million for overlay over 30 years if performed twice in that time period:



Note: Asphalt overlay can increase the life of a street by 20 years if preventative maintenance occurs. This example assumes 15 years due to degradation by various factors such as weather, use, and traffic loads.

Deferring maintenance until a street is in need of reconstruction will cost approximately \$6-\$10 million in 30 years:



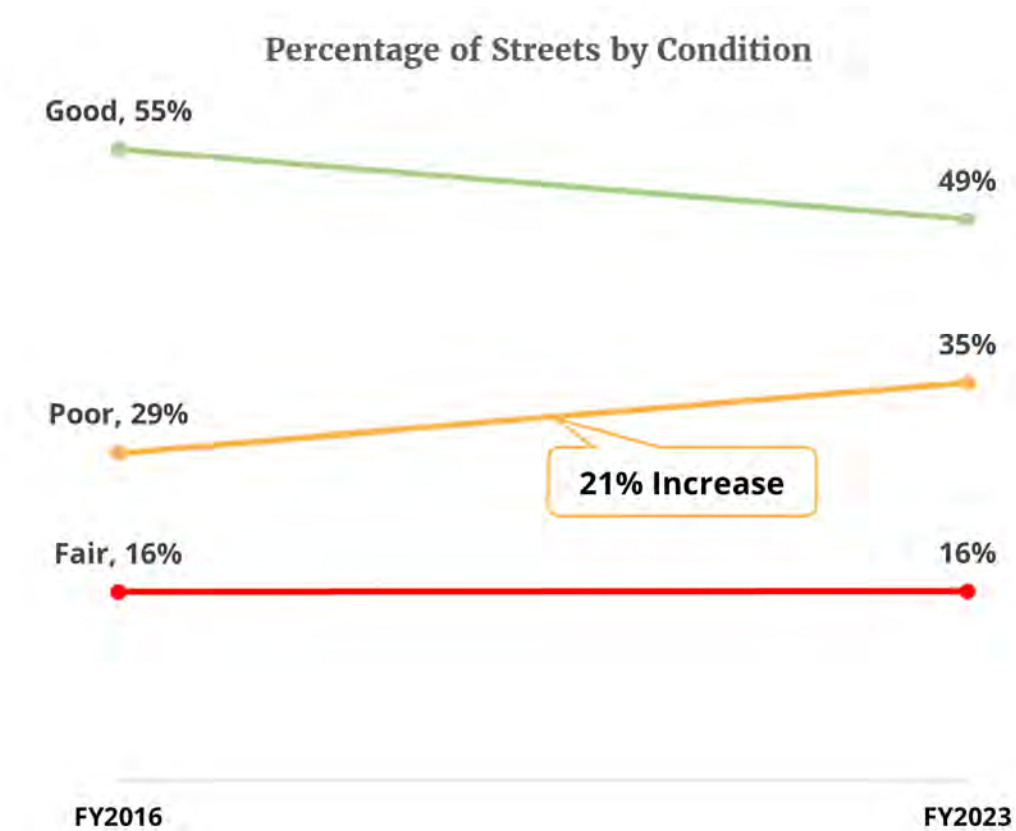
Note: Costs will likely increase over the 30-year period; these examples are meant to demonstrate the difference in costs between treatments over the same time period and how costs compound if minor repairs are deferred.

Source: OCA generated based interviews with Transportation regarding the per mile cost of slurry seal, overlay, and reconstruction; and review of the pavement lifecycle and treatment descriptions in City reports.

Underfunding and deferring maintenance has additional cascading effects. Specifically, as the City continues to underfund its street maintenance program, more and more streets fall into the fair and poor categories that require expensive and extensive repairs. As shown in **Exhibit 26**, the percentage of streets that have fallen into poor condition since 2016 has increased by 21 percent. Without a dedicated funding source, the number of streets in poor condition will continue to rise and increase future street maintenance costs.

Exhibit 26

While the Percentage of Streets in Good Condition Dropped From FY2016 to FY2023, the Percentage of Streets in Poor Condition Increased by Approximately 21 Percent

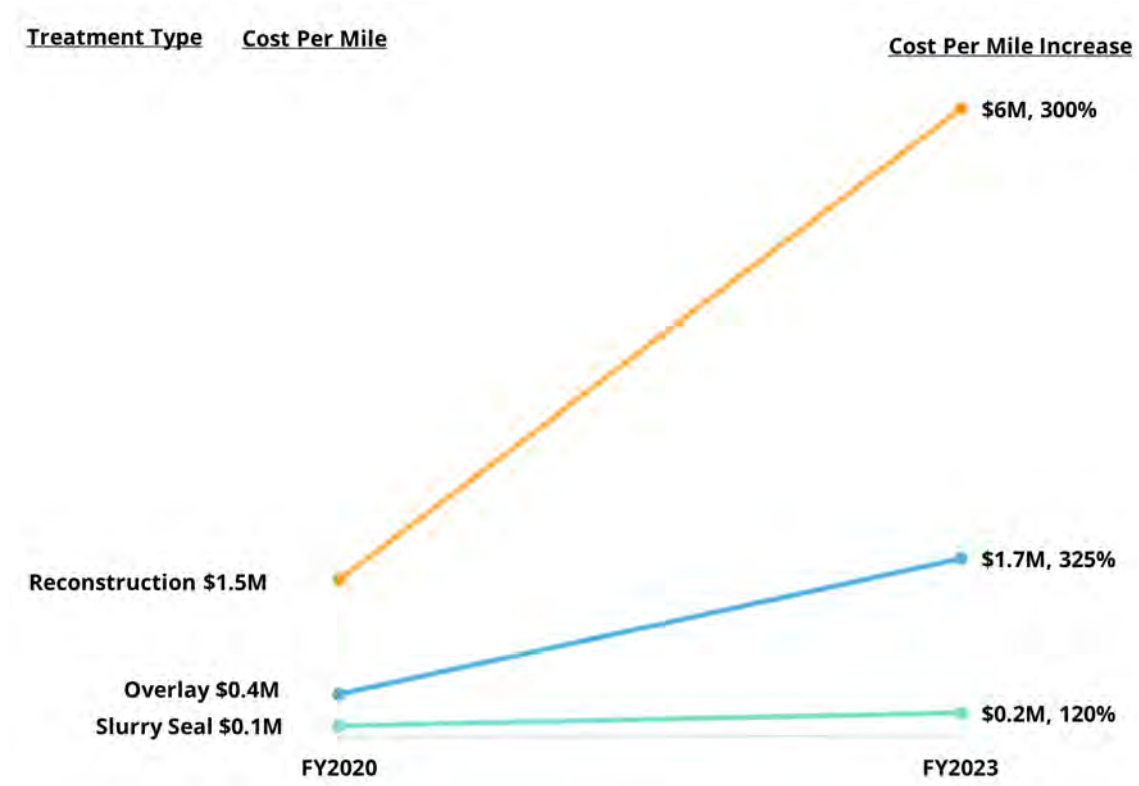


Source: OCA generated based on pavement condition data from FY2016 and FY2023.

Furthermore, rising inflation over time only compounds the cost of deferring street maintenance into the future. As shown in **Exhibit 27**, from FY2020 to FY2023, the cost per mile of each treatment type increased significantly, from 120 percent to as high as 325 percent. This was due in part to challenges related to the COVID-19 pandemic, such as supply chain issues and inflation. As each mile becomes more expensive, the fewer miles Transportation is able to accomplish with its limited funding.

Exhibit 27

While the Cost Per Mile for Each Treatment Type Has Significantly Increased From FY2020 to FY2023, the Cost of Overlay and Reconstruction Experienced the Greatest Increase



Note: According to Transportation, the cost per mile is always increasing based on inflation, the COVID-19 pandemic, and supply chain issues. Costs are based on actual bids that Transportation receives from its contractors.

Source: OCA generated based on review of the Independent Budget Analyst’s Review of the FY2023–FY2027 5-Year Capital Infrastructure Planning Outlook and interviews with Transportation.

A long-term funding strategy is needed to communicate to City leadership and the public the service level they can expect given the funding available and the resources needed to achieve desired service levels.

A funding strategy is an important complement to a long-term, comprehensive pavement management plan. The Government Finance Officers Association recommends that governments establish a system for assessing their capital assets and then appropriately plan and budget for any capital maintenance and replacement needs. This financial planning should include the following elements:

- Allocating sufficient funds to a multi-year pavement management plan;

- Establishing an ongoing source of funds to plan for asset maintenance and renewal; and
- Identifying revenue sources to help maintain service levels.

Furthermore, the Government Finance Officers Association states that while it is important to balance the vision of the community with available resources, the resources available should not inhibit the vision. The organization's objectives for a strategic plan will help determine how the resources available can be tied to future goals.

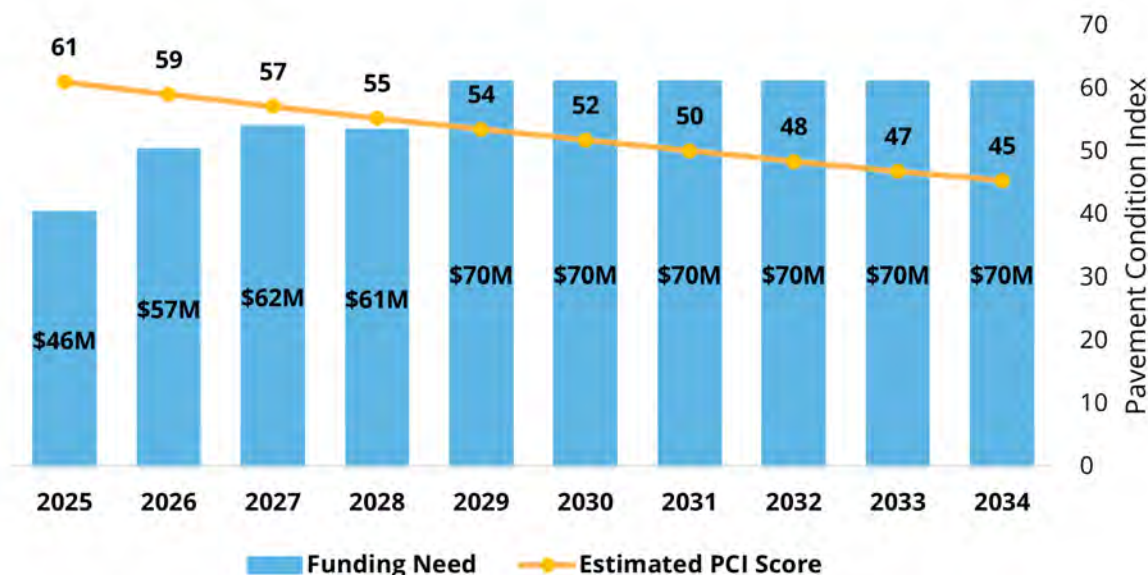
A funding strategy would provide the transparency necessary to allow City leadership to make informed and cost-effective decisions regarding street maintenance. However, Transportation stated that it has not created a funding strategy because it does not have a dedicated funding source. A funding strategy can still describe the costs associated with the street maintenance program, the costs needed to maintain the network at a desired quality, and how it is meeting service levels at the current and projected funding levels.

Transportation, in its pavement management plan, could therefore present several scenarios on how it intends to plan its future maintenance based on the resources available. It can also tie its desired network PCI score to various funding scenarios to show what it will take to achieve this goal. Doing so would inform the public and City leadership as to what service level they can expect given the funding available.

For example, **Exhibit 28** below shows that if funding levels were to stay the same for the next 10 years, the street network's PCI score would decrease from an estimated 61 to 45. Over this timeframe, the City would need to invest approximately \$645 million in road repair; yet this funding would not be enough to meet the department's goal to increase the quality of the City's street network to satisfactory condition—a PCI score of 70.

Exhibit 28

If Annual Funding Levels Stay the Same, the Estimated Average PCI of the City’s Street Network Would Continue to Decrease from an Estimated PCI of 61 in FY2025 to a PCI of 45 in FY2034



Notes: This scenario was created from Transportation’s pavement management system, Cartegraph. This scenario is based on historical funding levels for street maintenance and does not assume debt financing. According to Transportation, this scenario begins with a PCI score of 61 in FY2025 to reflect the estimated decline in the street network’s PCI score of 63 in FY2024.

Source: OCA generated based on data received from Transportation.

The plan would also identify the revenue sources for street maintenance and how they alone will not bridge the funding gap, as detailed in the next section.

Reliance on current and potentially identified revenue sources are not enough to address long-term funding needs for street maintenance.

In recent years, efforts have been made to increase funding for City services, including street maintenance. These sources, as shown in **Exhibit 29**, include special revenue funds (e.g., TransNet, GasTax, Road Maintenance and Rehabilitation Act), debt financing, street damage fees, the People’s Ordinance, and a local special tax measure. However, these sources will not provide sufficient funding to improve the quality of the City’s street network. For example, funding is limited or uncertain for several of these sources because other City services

or transportation improvements compete for them, including special revenue funds, the General Fund (via the People’s Ordinance), and debt financing. Policy decisions regarding debt financing and how the revenues from the repeal of the People’s Ordinance will be divided also provide long-term financial uncertainty for street maintenance. Furthermore, the estimated funding from Measure C may not materialize; the measure is currently being held up in court.

Exhibit 29

Actual and Potential Revenue Sources for Street Maintenance Have Competing Needs and Limitations

Revenue Source	Description	Potential of Actual Annual Amount*	Limitations
<p>Special Revenue Sources: TransNet, Road Maintenance & Rehabilitation Act, Gas Tax, Street Damage Fee</p>	<p>State and local taxes that support transportation improvements, including roadways.</p>	<p>\$65 million</p>	<ul style="list-style-type: none"> • Competes with other transportation projects, such as traffic signals, sidewalks, and bikeways. • Funding may decline as the City continues to prioritize mobility improvements in the right-of-way to increase access for all & as the City works towards climate change goals to reduce emission generated by gas powered vehicles.
<p>Debt Financing</p>	<p>Typically bond financing used to support City services, including street maintenance.</p>	<p>\$84 million</p>	<ul style="list-style-type: none"> • Future financing is a policy decision made by City Council, Mayor’s Office, and the City’s Executive Team & must be weighed against the City’s other competing needs. • Creates additional debt burden on General Fund.
<p>Street Damage Fees</p>	<p>Fees collected from excavators to recover repaving and reconstruction costs incurred by the City because of trenching. Fees increased in FY2024 to be fully cost recoverable.</p>	<p>\$8.9 million</p>	<ul style="list-style-type: none"> • Fees collected may be volatile as the amount of actual trenching varies annually. • Revenues could be lower than expected due to poor-quality controls in the way the City calculates the fees.

People's Ordinance	Amended ordinance that required the City to pay for general refuse collection from residences with access to the streets out of its General Fund operating budget. City may now be able to charge residents a fee for refuse collection.	\$59 million	<ul style="list-style-type: none"> Savings could be used to provide new or higher levels of public services such as street maintenance. The Department of Finance stated that the amount for street maintenance would likely be relatively small.
Measure C	A 2020 measure to raise the City's transient occupancy tax to close to \$7 billion over 42 years to finance three civic initiatives: convention center expansion, homeless services, and street repair.	\$9 million	<ul style="list-style-type: none"> Revenues may not materialize; the measure is currently held up in court.
Total		\$230 million	

Notes:

*These amounts are either actual or potential amounts. Please see the notes below for information on each source.

Note 1 – Special Revenue Sources: The \$65 million in special revenue funds is an estimate based on Transportation's projected funding for FY2025–FY2034 based on current allocation.

Note 2 – Debt Financing: The \$84 million is the actual amount that Transportation received for street maintenance in FY2024. While Transportation does not include any additional debt financing in its identified funding for FY2024–FY2028, future debt financing could manifest based on policy decisions made by the Mayor's Office, City Council, and the City's Executive Team.

Note 3 – Street Damage Fees: This estimate is based on the Independent Budget Analyst's calculation of anticipated annual revenues as a result of the increase in the Street Damage Fee, which was approved by Council in August of FY2024 and went into effect in January of 2024.

Note 4 – People's Ordinance: This estimate is based on the Independent Budget Analyst's FY2023 analysis that if a fee were implemented to cover the costs of the City's solid waste services, it would free up approximately \$59 million from the City's General Fund that currently pays for solid waste services. This money could be redirected to other core services such as public safety, parks, streets, and libraries.

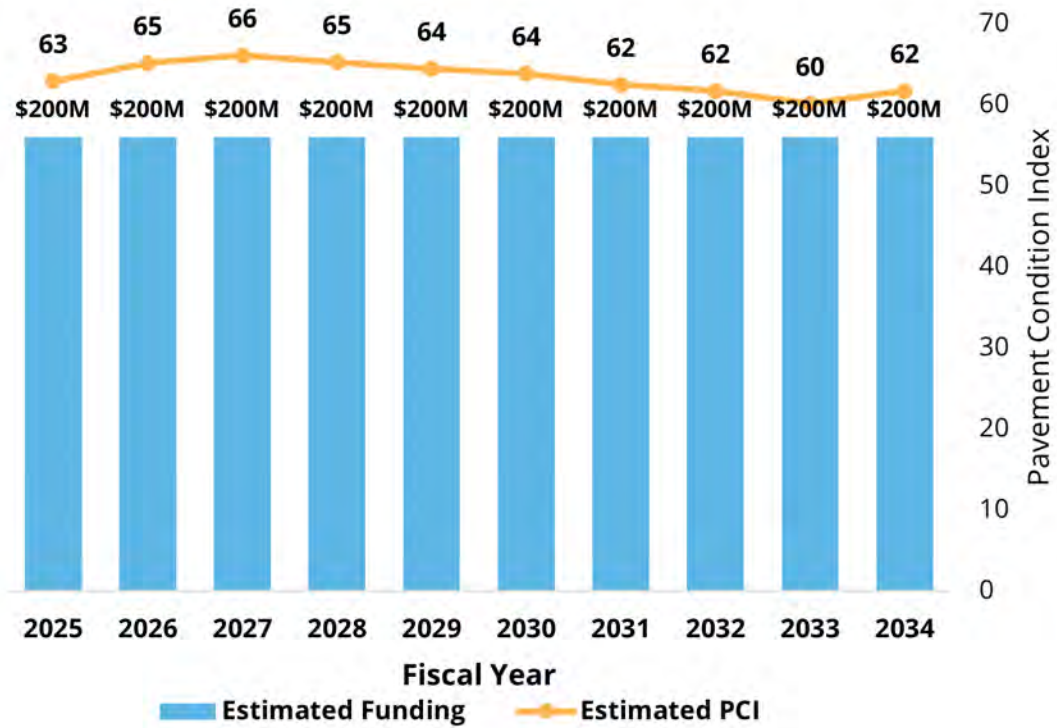
Note 5 – Measure C: According to the Department of Finance, street maintenance will receive approximately \$9 million annually if the court upholds the measure's approval by voters.

Source: OCA generated based on review of Transportation's revenue sources and identified funding for FY2025–FY2034, the Independent Budget Analyst's report on street damage fees and the amending of the People's Ordinance, articles on Measure C, and interviews with the Department of Finance.

Assuming, however, that Transportation receives some combination of the revenues identified above—People's Ordinance, increased Street Damage Fees, and Measure C—for an approximate investment of \$200 million annually for 10 years, this amount would still not be enough to increase the City's street network condition to a PCI score of 70. In fact, as shown in **Exhibit 30**, the quality of the street network would remain relatively consistent in fair condition.

Exhibit 30

If Revenues Increase to Approximately \$200 Million Per Year, the Estimated Average PCI Score of the City’s Street Network Would Remain Relatively Consistent in Fair Condition



Notes: This scenario was created from Transportation’s pavement management system, Cartegraph.
 Source: OCA generated based on data received from Transportation.

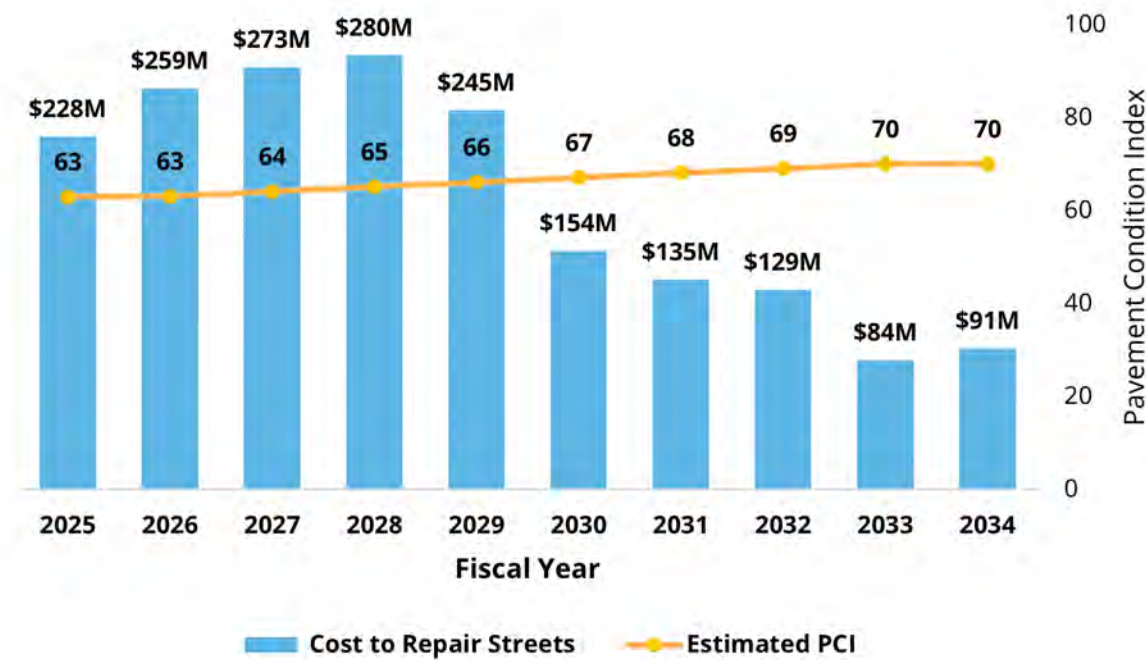
In another recent effort to increase funding for street maintenance, the San Diego County Grand Jury recommended that the City pass an appropriation ordinance to commit an annual allocation from the General Fund to be used solely for street maintenance. However, while such a recommendation is valuable, it is unlikely to be implemented. Specifically, the City noted in its response that it will not implement this recommendation because it needs the flexibility to fund a wide range of City programs. Additionally, tying specific amounts of future General Fund dollars to one program limits the ability of the City’s decisionmakers to respond to fluctuating revenues and future funding needs.

The funding strategy should also show what kind of investment it will take to reach the City's network PCI goal.

In addition to displaying Transportation's overall PCI goal, the funding strategy should display the amount of funding needed to reach this goal—even if it is aspirational. This will give residents and City leadership a clear picture of the kind of investment needed to meet the desired PCI goal. For example, **Exhibit 31** shows that the City would need to invest approximately \$1.9 billion over the next 10 years and complete approximately 4,000 miles, to reach its PCI goal of 70.

Exhibit 31

The City Would Have to Invest \$1.9 Billion to Get to an Average Street Network PCI Score of 70 in 10 Years



Notes: This scenario was created from Transportation's pavement management system, Cartegraph.

Source: OCA generated based on data received from Transportation.

The exhibit shows that over the first 5 years, the City would have to make a significantly high investment—approximately \$1.3 billion (or 68 percent of the total 10-year cost), after which costs will decline to approximately \$593 million. The reason for these shifts stems from the fact that a significant proportion of miles in the above scenario, especially in the first 5 years, are intended to be repaired using overlay—a more expensive treatment. Overlay treatments make up an average of 29 percent of repairs in the first 5 years while slurry

and other seal treatments comprise an average of 71 percent of the repairs. From years 6 to 10, slurry seal and other seal treatments make up nearly 100 percent of total estimated repairs. This scenario likely addresses the significant backlog of streets requiring overlay that have been put off or delayed in the last 8 years. From FY2016 to FY2023, slurry seal comprised approximately 74 percent and overlay comprised approximately 25 percent of total miles completed. As mentioned in Finding 5, completion of overlay miles decreased significantly after FY2019, relative to completed miles prior to that time from FY2019 to FY2023.

A significant investment in the City's streets is needed upfront to keep costs from deferred maintenance from rising in the future.

Given the City's estimated \$745 million budget shortfall in the next five years, according to the FY2025–FY2029 5-Year Financial Outlook, this underscores the need to find a short-term funding source to fix the City's streets. As shown in the scenario above, a significant investment in the City's streets is needed upfront to keep costs from deferred maintenance from rising in the future.

While the City does not have any policies requiring funding strategies, it has several guidelines and examples.

In the last 10 years, the City has made a strong effort to learn the condition of its assets and use this information to guide its capital planning. This effort began with the development of Council Policy 800-16, a policy that provides guidelines and steps that are necessary for a successful asset management plan. The policy calls for reviewing an asset holistically—from considering the lifecycle cost, analyzing the residual life of the asset, optimizing operations and maintenance investment, to determining a funding strategy.

More recent calls for the City to hone its asset management planning, including the development of a financial strategy, have been made. For example, the Independent Budget Analyst Office's (IBA) March 2023 report on Citywide Asset Management Practices called for the City to develop a large-scale and holistic financing strategy, including new revenue sources. It will also require a well-developed and viable plan to execute projects that includes asset management practices, such as establishing service level goals, conducting condition assessments, and using asset management systems to provide the data and strategies needed to support wise infrastructure investments.

Similarly, some City Councilmembers called for the creation of a rolling 5-year workplan for slurry seal and street resurfacing in a memo to the Mayor's Office in February 2023, which is what Transportation

eventually completed and published in January 2024. In their request, they compared this suggested plan to the City’s already-existing 5-Year Outlooks presented by the Engineering and Capital Projects and Public Utilities Departments.

Our previous audit of the City’s Stormwater Department provides an example of the importance and utility of a funding strategy.

Our previous audit of the City’s Stormwater Department (Stormwater) provides an example of the importance and utility of a funding strategy. Based on our office’s recommendation, the Stormwater Department has developed a funding strategy to address its approximately \$5.5 billion stormwater needs over the next 20 years.²³ The audit found a similar situation to that facing street maintenance—increasing costs, historic and chronic underfunding, and growing deferred maintenance. **Exhibit 32** details the City’s guidelines and examples of funding strategies.

Exhibit 32

City Asset Planning Guidelines & Funding Strategy Examples

Guideline or Example	Description
Council Policy 800-16	<ul style="list-style-type: none"> • Asset management includes an asset plan, regular condition assessments, and a funding strategy. • Funding strategy should identify all available and potential funding sources & their restrictions for proper use. This might include determining funding opportunities, identifying the organizations involved, and describing the steps in securing the funding.
Public Utilities Department’s Five-Year Outlook	<ul style="list-style-type: none"> • Acts as a long-range financial planning tool for the department’s water and wastewater funds to guide programmatic decisions; • Focuses on overall fiscal condition of these funds; • Assesses impacts to revenues and expenditures from regional water and wastewater demands; • Explores a funding strategy to finance major capital investments in water and wastewater system infrastructure and the Pure Water Program construction.
Stormwater Funding Strategy	<ul style="list-style-type: none"> • Identifies strategies to address Stormwater’s \$5.5 billion needs over the 40 years. • Complements Stormwater’s Watershed Asset Management Plan – its long-term planning document. • Describes costs associated with underfunding & evaluates funding options.

Source: OCA generated based on review of the City’s Council Policy 800-16, the Public Utilities Department’s Five-Year Outlook, and the Stormwater Department’s Funding Strategy.

²³ Performance Audit of the Storm Water Division: https://www.sandiego.gov/sites/default/files/18-023_storm_water_division_0.pdf. The \$5.5 billion figure is in 2020 dollars and covers the period of FY2021 to FY2040.

A funding strategy similar to that of the Stormwater Department's and one that is paired with a pavement management plan would inform City leadership and the public about the street maintenance program's finances and service levels at a particular level of funding.

Other cities we benchmarked with include funding information in their pavement management plans.

We found that the cities of Phoenix, Chula Vista, Dallas, San Jose, and Sacramento include funding information in their pavement management plans. Importantly, their plans describe funding regardless of whether it is sufficient to meet each cities' street maintenance needs. For example, the City of Chula Vista's plan notes that it is funded at 50–70 percent of its total need (\$10 million to \$14 million of the needed \$20 million) to maintain its street network at PCI score of 80. Similarly, the City of Sacramento's plan shows that it needs five times the amount of funding it currently receives to stop the steep decline in pavement condition.

A funding strategy should explore other cost savings measures and identify potential dedicated funding sources.

Stormwater's funding strategy voices a concern similar to that of streets—that deferring maintenance is only more expensive in the future.

Given the substantial financial needs for street maintenance, a funding strategy should also identify potential cost savings measures and pursue dedicated funding sources. For example, Stormwater's funding strategy explores several methods to enhance cost savings and to increase funding, such as establishing inspection fees and increasing fees for parking tickets. The strategy also explores a dedicated funding source to support stormwater needs—a ballot measure that would add a parcel tax to residents' properties. Importantly, the Stormwater strategy voices a concern similar to that of streets—that deferring maintenance is only more expensive in the future compared to earlier preventative maintenance. As of 2021, polling on the potential ballot measure showed that nearly two-thirds of voters are in favor.

As shown in **Exhibit 33**, several cities we benchmarked with have found dedicated funding sources to address their funding gaps for street maintenance.

Exhibit 33

Other Cities Have Passed Measures to Address the Gap in Funding for Street Maintenance

City	Measure to Address Funding Gap in Street Maintenance
Chula Vista	Measure P – a temporary, 10-year, half-cent sales tax to fund high priority infrastructure needs, including streets. Collection of the sales tax began April 1, 2017. The sales tax is projected to raise \$245 million with nearly \$23 million going towards street maintenance.
Phoenix	Transportation 2050 – a 0.7 percent sales tax which becThis measure funds On Aug. 25, 2015, Phoenix voters approved a 7/10 th of a cent sales tax measure to invest in bus service, light rail construction, and street improvements. The Transportation 2050 plan places additional emphasis on street needs, including street maintenance, new pavement, bike lanes, sidewalks, and ADA accessibility, which will all complement the increase in transit services. This sales tax will raise \$16.7 billion over 35 years with more than \$2.3 billion projected to fund street improvements.
Long Beach	Measure A – a Long Beach ballot initiative approved by voters in 2016 as a 10-year, 0.75% sales tax to fund public infrastructure and public safety services and was extended indefinitely by voters in 2020. This sales tax would raise around \$747 million over the first 10 years with around \$31 million going towards bond financing of street maintenance.
San Jose	Measure T – On November 6, 2018, City of San Jose voters approved Measure T. Measure T will raise \$650 million, at an estimated tax rate of \$0.0184 per \$100 in assessed property value, in general obligation bonds to finance the cost of public infrastructure and public safety facilities, including repaving streets and potholes in the worst condition. Approximately \$208 million will go toward the repair or rehabilitation of streets in the worst condition.

Source: OCA generated based on reviews of websites from the cities of Chula Vista, Phoenix, Long Beach, and San Jose.

According to the Mayor’s Office, internal discussion is under way to consider a ballot measure to address not only the funding needs of street maintenance, but also other City assets. This measure could be on the ballot as early as November of 2024.

Recommendation

To ensure that the Transportation Department identify and pursue a long-term, dedicated funding source for the street maintenance program, we recommend:

Recommendation 4.1

(Priority 1)

The Transportation Department (Transportation) should develop a 5-year, long-term funding strategy to meet its present and future capital and operational needs for street maintenance. This long-term funding strategy should include the following scenarios that tie funding needs to expected service levels and resulting changes to the street network's overall condition index score:

- Scenario A: If funding levels stay the same, demonstrate how the street network's estimated average PCI will decline over five years and result in a backlog of deferred maintenance.
- Scenario B: Show how the street network's estimated average PCI score will change based on actual and potentially identified revenue sources (or increases) and identify resultant changes in the City's backlog of deferred maintenance.
- Scenario C: Show the financial investment that is needed to achieve the City's desired estimated average PCI score.

This funding strategy should be updated and presented annually to the Active Transportation and Infrastructure Committee and City Council in concert with Transportation's pavement management plan as specified in Recommendation 1.1.

Transportation should work with the City of San Diego's Department of Finance to review long-term funding options and include these options in the funding strategy, such as: continued / increased reliance on the General Fund and special revenue funds, general obligation bonds, additional revenue sources, and any other options that may significantly contribute to closing the existing funding gap.

The Standard Operating Procedure recommended in Recommendation 1.3 should require that this information be included in each annual pavement management plan.

Management Response: Agree [See full response beginning on page 95.]

Target Implementation Date: July 2024

Analysis of 2024 Pavement Management Plan

Concurrently with this audit, the Transportation Department developed and published its 5-Year Pavement Management Plan (PMP) which includes a discussion of its long-term funding needs over the next 5 to 10 years, in January of FY2024. In our brief review of the new plan, we found that Transportation's plan identifies several scenarios that show changes to the street network based on three street selection approaches, treatment type cost assumptions, and various funding levels, including if funding levels were to stay the same. Based on discussion of these various approaches, Transportation recommends its best value approach which achieves its street condition goal of a street network Pavement Condition Index score of 70 in 10 years at a cost of \$1.9 billion. The PMP also briefly discusses avenues for increasing funding or cost-savings measures, such as creating a new source of revenue, obtaining additional grant funding, and collaborating with other departments to streamline street maintenance efforts.

While the information in the plan is a marked improvement, the City and Transportation still need to identify and pursue a strategy for funding street maintenance at desired levels. Therefore, OCA will keep open Recommendation 4.1 to review Transportation's future progress towards developing and implementing a 5-year, long-term funding strategy that identifies its funding scenarios and strategies towards implementing its desired funding scenario. This recommendation will also stay open until the completion of the Standard Operating Procedure that incorporates the requirement for this funding strategy.

Finding 5

The Street Maintenance Program has not been able to expend all available resources and should continue to develop strategies to increase capacity.

Finding Summary

In addition to a funding strategy, the City also needs to continue to develop operational strategies to increase the capacity of the Street Maintenance Program. We found that over the last 6 years (FY2018 through FY2023), the program only spent 79 percent of the funds it was allocated, even though allocated resources are far less than what is needed to achieve and maintain a PCI of 70. We also found that every year from FY2019 through FY2023, the program only completed 71 percent or less of the street repair mileage goals it expected to achieve, meaning even fewer streets have been maintained than the program's limited resources allow for.

Some reasons for the street maintenance program's limited capacity—such as unpredictable funding, which restricts the program's ability to stabilize operations—are beyond its control, but could be mitigated with a City funding strategy that makes resources more predictable. The suspension of work, staffing shortages, and price increases during the COVID-19 pandemic were also outside of the program's control, although the program fell significantly short of its goals both before and after the pandemic as well. Additionally, the transfer of capital street repair projects from Transportation to the Engineering and Capital Projects Department (E&CP) led to the decline in output of overlay miles partially due to the aforementioned reasons as well as more complex projects and the absence of a smooth transition process.

Transportation and E&CP indicated that they are implementing strategies to address some of the issues that have reduced the program's capacity. By continuing to develop operational strategies and including them in a Pavement Management Plan, the City can help ensure that all resources allocated to the program—including potential additional resources identified in the funding strategy—will be utilized towards achieving the City's street maintenance goals.

The Street Maintenance Program has not utilized all of the resources it has been allocated in recent years.

We found that over the last 6 years, the City allocated \$331 million to the Street Maintenance Program, but the program only spent \$263 million (79 percent) over the same time period. As shown in **Exhibit 34**, the program was unable to spend all funds provided both for operational (slurry seal) and capital (overlay, reconstruction, and

concrete) street maintenance. Specifically, the program was allocated \$159 million for slurry seal projects, but only \$114 million (72 percent) was spent. The program was allocated \$172 million for capital projects, but only \$149 million (87 percent) was spent.

Exhibit 34

The Street Maintenance Program Only Spent 80 Percent of Budgeted Funds from FY2018 through FY2023

Operations Budget (Slurry Seal) (in Millions)			
Fiscal Year	Budget	Expenses	Variance
2018	\$25	\$19	\$6
2019	\$26	\$19	\$7
2020	\$34	\$14	\$20
2021	\$9	\$16	(\$8)
2022	\$29	\$21	\$8
2023	\$38	\$25	\$12
Total Operations	\$159	\$114	\$45
Operations Budget (Overlay, Reconstruction, Concrete) (in Millions)			
Fiscal Year	Budget	Expenses	Variance
2018	\$53	\$27	\$26
2019	\$3	\$23	(\$20)
2020	\$14	\$25	(\$10)
2021	\$25	\$17	\$8
2022	\$57	\$16	\$41
2023	\$20	\$42	(\$22)
Total Capital	\$172	\$149	\$23
Street Maintenance Total (Operations + Capital)	\$331	\$263	\$68

Notes:

*In some years, expenses exceed budgeted funds. This is due to continuing appropriations, where unspent funds from prior years are carried forward to future years. For example, in FY2021, the Street Maintenance Program was budgeted \$9 million for slurry seal projects, but spent \$16 million. The program had additional funds available via continuing appropriations from prior years when the full budget was not spent.

**Due to rounding, the numbers in the chart may not add up exactly to the total amounts listed.

Source: OCA generated based on financial reports pulled from SAP and some received from Transportation.

The Street Maintenance Program has also fallen short of its mileage goals, which are set based on the funding available.

As discussed in Finding 1, the Street Maintenance Program sets several goals each year, including a goal for the street maintenance mileage it expects to be able to complete given the limited funding available. This goal is typically less than the mileage goal to achieve and maintain a PCI of 70 because funding has not been sufficient to meet that goal in recent years.

Given the City’s deteriorating street conditions and limited funding available, completing every mile the Street Maintenance Program receives funding for is essential to keeping City streets in as good a condition as possible. However, while the program met its expected mileage goal in FY2016, we found that the program fell short of its expected mileage goals in every year from FY2017 to FY2023, as shown in **Exhibit 35**. While the program came relatively close to meeting the goal in FY2017 and FY2018, the program has fallen at least 29 percent short since FY2019. In the two most recent years, FY2022 and FY2023, the program fell 33 percent short each year.

Exhibit 35

The Street Maintenance Program Completed 71 Percent or Less of Target Mileage Goals in Every Year from FY2019 to FY2023

Fiscal Year	Targeted Mileage*	Miles Completed	% of Target Mileage Completed
2016	308	331	108%
2017	308	268	87%
2018	349	334	96%
2019	390	275	71%
2020	430	191	44%
2021	365	203	56%
2022	350	235	67%
2023	275	184	67%

Note: From FY2016 to FY2020, Targeted Mileage represented the number of miles the program needed to complete to maintain a street network PCI score of 70. According to Finance, beginning in FY2021, Transportation changed the targeted mileage to reflect the number of miles the program estimates it can reasonably complete given various limitations such as staffing availability and capacity.

Source: OCA generated based on review of Transportation’s budget documents from FY2017 through FY2023 and data received from Transportation.

There are several problems limiting the Street Maintenance Program’s ability to spend all available funds and reach mileage goals—some of which could be mitigated with a funding strategy.

Both Transportation and E&CP have taken steps to address issues that limit street maintenance capacity.

Transportation and E&CP highlighted several problems that have impacted the Street Maintenance Program’s ability to complete all of the street maintenance work it is funded for. Both departments have taken steps to address several of these issues, and some issues could be mitigated with a sufficient funding strategy and more predictable funding. Certain issues, such as inflation and the COVID-19 pandemic, were outside of the City’s direct control. The following sections briefly describe core problems, steps the program indicates it has taken to address some of the issues, and additional strategies the City could consider as it works to increase street maintenance operational capacity.

Inconsistent and Unpredictable Funding

Because the City has limited resources and lacks a funding strategy for street maintenance, funding varies widely from year to year. The Street Maintenance Program does not know how much funding it will receive until the annual budget is approved in June, just prior to the beginning of the new fiscal year each July 1st. According to Transportation and E&CP, this makes it very difficult to ramp up capacity when its budget is significantly increased for a year, only to be reduced the following year, which frequently occurs. For example, in FY2023, E&CP received \$20 million for capital street projects and in FY2024, it received \$104 million.

Sufficient—or, at a minimum, predictable—funding will help the Street Maintenance Program anticipate the resources it will receive and plan ahead.

As discussed in Finding 4, Recommendation 4.1, we recommend the City develop a funding strategy to stabilize and potentially increase funding for street maintenance. In addition to helping avoid the City’s deferred street maintenance backlog from becoming even more costly, sufficient—or, at a minimum, predictable—funding will help the Street Maintenance Program anticipate the resources it will receive and plan ahead to ensure it has sufficient capacity to complete the work it is budgeted for.

Staffing Shortages

Currently, most slurry seal and overlay projects are completed by City contractors, ;but City staff are still needed to determine which projects should be prioritized each year, conduct planning activities for the projects that have been selected, complete the contracting process, and monitor contractor performance. The Street Maintenance Program indicated that turnover and vacancies were a factor that limited capacity over the past several years.

While we did not review the program’s staffing challenges in detail, a primary reason for staffing shortages in the Street Maintenance Program is likely the City’s lengthy hiring process. As discussed in our July 2024 [Performance Audit of the City’s Classified Employee Hiring Process](#), filling a vacant classified position took approximately 9 months during that audit’s scope period, which included positions that were filled between October 2021 and December 2022. The City has convened a Hiring Working Group to identify ways to improve the hiring process. In addition, our audit included 12 recommendations to the City Administration and the Personnel Department to speed up the hiring process. Both the City Administration and Personnel agreed to all recommendations and are currently working on implementation.

Transfer of Capital Street Maintenance Projects to E&CP

Capital street maintenance work slowed significantly after it was transferred to E&CP.

In FY2021, the City transferred management of capital street maintenance projects, including overlay, reconstruction, and concrete work, to E&CP. According to E&CP, this work was transferred because E&CP manages most other City capital projects, which are more complex than slurry seal projects. E&CP stated that the goal was for the transfer to result in more consistent and complete capital project delivery, and to centralize oversight of complex capital projects under one department.

Subsequently, capital street maintenance work slowed significantly. For example, overlay work decreased from 95 miles in FY2018 to 61 miles in FY2019, and continued to come in significantly below expected 91-mile goal through FY2023.

According to E&CP, the decline in productivity was due to turnover and staff shortages as a result of the COVID-19 pandemic; wildly inconsistent funding that limits Transportation’s and E&CP’s abilities to plan repair miles in the next fiscal year and future years; increasing project complexity; cost escalations due to the pandemic, inflation, and

having few contractors; and absence of a smooth transition process. In addition to the City's work on shortening hiring timelines discussed above, E&CP recently received a consultant study identifying ways to streamline E&CP operations and is working on implementing the recommended improvements. In addition, E&CP stated that it recently piloted a 'tiger team' approach to addressing high-priority street maintenance, which involves bringing a variety of cross-functional experts together to address challenging project issues. E&CP reported that the results of the pilot were positive, and it expects this approach to increase capital street maintenance project delivery.

Limited Contractor Pool and Inflation

Only two contractors bid on the most recent request for proposals for slurry seal work.

Transportation indicated that there is a limited pool of contractors that bid on City street maintenance work. For example, Transportation stated that only two contractors bid on the most recent request for proposals for slurry seal work, and the City only has two contractors currently performing this work.²⁴ Having limited competition for bids on street maintenance work could exacerbate high inflation rates experienced in recent years across the U.S. economy, contributing to much higher per-mile costs for street maintenance in recent years. For example, from FY2020 to FY2023, the City's per-mile cost of slurry seal increased from \$100,000 to \$220,000, the per-mile cost for overlay increased from \$400,000 to \$1.7 million, and the per-mile cost for street reconstruction increased from \$1.5 million to \$6 million and above.

This is another area for a funding strategy that provides sufficient, stable street maintenance funding can help to address. Currently, the City's street maintenance funding varies widely from year to year, meaning that the work given to contractors also varies significantly. This could make City street maintenance contracts less appealing to potential bidders. Having more predictable funding that will help the City increase its maintenance mileage and achieve the City's PCI goal of 70 could help increase the contractor pool and the competitiveness of the bids the City receives on street maintenance work. According to Transportation, even with a large increase in consistent year-over-year funding, there would not be enough contractors available to handle the work that such an immediate increase in funds would afford. Due to the specialized nature of slurry seal and overlay work, it would take approximately 3 years for new contractors to establish business in the San Diego area.

²⁴ The City also suspended another contractor from bidding on new work for the City until 2030 due to allegations of fraud.

Limited, inconsistent funding has made it infeasible to bring more street maintenance work in-house.

In addition, some other large cities, such as Los Angeles, use in-house crews for a substantial portion of street maintenance work. While this would reduce the City's reliance on contractors, according to Transportation, bringing significant street maintenance work in-house has not been feasible in San Diego. Limited, inconsistent funding means the City may not be able to support the significant start-up costs for in-house operations. Also, inconsistent funding makes bringing in-house staff infeasible, as it would not be practical to hire the significant staff that would be needed for such a program if funding may be reduced in the near future.

While we did not evaluate whether the City should bring any street maintenance functions in house as part of this audit, we believe the City should evaluate all options available to increase street maintenance capacity and avoid the exponentially higher costs of maintaining the system as streets continue to deteriorate. In 2023, the San Diego County Grand Jury recommended the City conduct a cost-benefit analysis of bringing street maintenance in-house to which the City agreed, and published its analysis in its new Pavement Management Plan that was released in January 2024.

Other Factors

The program cited several other problems that limited its' productivity in recent years. Clearly, the COVID-19 pandemic was outside of the program's control and contributed to staffing shortages and project delays, although we note that the program was falling short of targeted mileage goals both before and after the pandemic as well. Transportation indicated that bid protests – when there is a challenge to a contractor's receipt of a contract – caused delays. The program also cited new requirements that Americans with Disabilities Act (ADA) improvements, such as accessible curb ramps, be added to street maintenance projects also made projects more challenging to plan and complete. Similarly, the program's recent effort to combine concrete and overlay projects to create more cohesive street improvements had also made those projects more time consuming and costly to complete.

While we did not review any of these issues in detail, any strategies the City is using to overcome them should be included in the Pavement Management Plan.

The Street Maintenance Program should incorporate strategies for increasing capacity into a Pavement Management Plan.

Increasing street maintenance capacity is essential to ensuring that the limited resources the City is able to allocate to streets are used to the greatest possible benefit. According to the Government Finance Officers Association, effective strategic planning includes both establishing a vision and goals and developing and continuously monitoring strategies to achieve them.

The Street Maintenance Program needs to demonstrate it has the capacity to deploy any additional resources it is provided.

In this case, the City has established goals both for reaching and maintaining a PCI of 70. However, it has not been able to reach its expected mileage goals. As the City contemplates a funding strategy and potentially increased funding for the Street Maintenance Program, it is important that the strategies the City is taking to overcome capacity challenges and reach expected mileage goals are included in the Pavement Management Plan. Inclusion of these strategies in the plan provides transparency and accountability and is needed to demonstrate to City leadership and the public that the program will be able to deploy any additional resources it is provided under a comprehensive, consistent funding model.

Recommendation

In order to provide transparency and accountability, and to increase the capacity of the Street Maintenance Program so it can reach current and future expected mileage goals, we recommend:

Recommendation 5.1

(Priority 1)

The Transportation Department, in collaboration with the Engineering and Capital Projects Department and other City departments as applicable, should include in its pavement management plan as recommended in Recommendation 1.1, a discussion of all significant obstacles to completing targeted street repair mileage each year. This discussion should also include strategies being utilized to overcome these obstacles (to the extent they are within the City’s control), increase the Street Maintenance Program’s capacity to meet expected mileage goals, and their effectiveness in doing so. Discussion should also include measurable performance metrics where applicable (such as the vacancy rate and hiring timelines for program staff).

The discussion should include how the strategies are being utilized to address the following issues:

- a. Inconsistent and unpredictable street maintenance funding;
- b. Updates in the program's structure and requirements, such as the transfer of capital repair work to E&CP and new requirements to incorporate ADA improvements into street maintenance projects;
- c. Staff shortages and turnover;
- d. Limited street maintenance contractor pool, including analysis of bringing additional street maintenance operations in-house;
- e. Industry capacities and price escalations that can impact the annual mileage goals; and
- f. Any additional issues that limit capacity.

The Standard Operating Procedure in Recommendation 1.3 should require that this information be included in each annual Pavement Management Plan.

Management Response: Agree [See full response beginning on page 96.]

Target Implementation Date: July 2024

Analysis of 2024 Pavement Management Plan

Concurrently with this audit, the Transportation Department developed and published its 5-Year Pavement Management Plan (PMP) in January of FY2024. In our brief review of the new plan, we found that per our recommendation, the plan includes a discussion on how inconsistent funding for the street maintenance program over time has led to a decline in the City's street network quality and how continued underfunding only increases future costs. The plan also explores limitations on capacity such as small contractor pool, regional shortages of skilled labor, increasingly scarce materials, and significant initial costs to set up an in-house paving operation. Alongside these limitations, Transportation explores potential strategies to overcome them, such as holding industry workshops to increase the contractor pool, using recycled materials, and requesting budget for another mill and pave team.

OCA will keep open Recommendation 5.1 to review Transportation's future progress towards developing and implementing some of its strategies to increase funding and capacity, including reporting on the effectiveness of these strategies in increasing street maintenance capacity. This recommendation will also stay open until the completion of the Standard Operating Procedure that incorporates the requirement for discussions on capacity limitations and strategies to overcome them.

Appendix A

Definition of Audit Recommendation Priorities

The Office of the City Auditor maintains a priority classification scheme for audit recommendations based on the importance of each recommendation to the City, as described in the table below. While the City Auditor is responsible for providing a priority classification for recommendations, it is the City Administration’s responsibility to establish a target date to implement each recommendation, taking into consideration its priority. The City Auditor requests that target dates be included in the Administration’s official response to the audit findings and recommendations.

PRIORITY CLASS*	DESCRIPTION
1	Fraud or serious violations are being committed. Significant fiscal and/or equivalent non-fiscal losses are occurring. Costly and/or detrimental operational inefficiencies are taking place. A significant internal control weakness has been identified.
2	The potential for incurring significant fiscal and/or equivalent nonfiscal losses exists. The potential for costly and/or detrimental operational inefficiencies exists. The potential for strengthening or improving internal controls exists.
3	Operation or administrative process will be improved.

* The City Auditor is responsible for assigning audit recommendation priority class numbers. A recommendation that clearly fits the description for more than one priority class shall be assigned the higher priority.

Appendix B

Audit Objectives, Scope, and Methodology

Objective

In accordance with the Office of the City Auditor's approved Fiscal Year 2023 Audit Work Plan, we conducted a performance audit of the City's Street Maintenance Program. Our audit included the following objectives:

Objective 1: Determine whether the Transportation Department adequately plans for street maintenance to ensure that repairs and maintenance are efficient, effective, and equitable. Specifically, we focused on several key areas, including:

- Data Collection – Evaluate whether the Transportation Department collects, maintains, and uses accurate data when planning its street maintenance.
- Funding – Review how the City prioritizes funding for street maintenance and whether the department is funded to maintain its desired level of maintenance.
- Prioritization – Review whether the Transportation Department prioritizes street maintenance based on best practices and accurate data.

Based on the objective described above, our audit resulted in five findings, and the corresponding methodologies are presented below in the order discussed in the report.

Scope

Our analysis focused primarily on street maintenance programmatic information from FY2018 to FY2023, including budgetary, operational, and performance data for the period. In certain instances, our analyses included data from FY2016 to FY2023 to reflect trends, as appropriate noted throughout the report.

Methodology

Finding 1: To determine whether the Transportation Department follows best practices for prioritizing street maintenance and communicates plans to enhance transparency and accountability, we:

- Reviewed Transportation Department programmatic, budget, and performance data published in City documents and digital platforms including:
 - 5-year Capital Outlook
 - Transportation Annual Budgets

- 5-year Financial Outlook
- City's Street Repair Website
- Analyzed Transportation Department data for targeted, budgeted, and actual street maintenance data by fiscal year and by City Council district.
- Reviewed Government Finance Officers Association and other relevant industry information to ascertain best practices information and guidance relevant to street maintenance programs.
- Benchmarked content and scope of other cities' Pavement Management Plans, including:
 - Phoenix, AZ
 - Dallas, TX
 - San Jose, CA
 - Sacramento, CA
 - Long Beach, CA
- Benchmarked other municipalities' prioritization factors for street maintenance, including:
 - San Diego County, CA
 - Los Angeles, CA
 - Chula Vista, CA
 - Houston, TX
 - Phoenix, AZ
 - Seattle, WA
 - San Jose, CA
- Reviewed Transportation Department's 5-year Pavement Management Plan, which was issued January 2024, concurrent with the conclusion of our audit. As a result, OCA provided only preliminary observations on the content of the Pavement Management Plan.
- Interviewed key staff and stakeholders:
 - Deputy Chief Operating Office
 - Transportation Department Director
 - Department of Race and Equity Director
 - Engineering and Capital Projects Director and management staff
 - Selected City Council Members and staff
 - Street Maintenance Program management and supervisory Staff
 - Department of Financial Management executive and managerial staff
 - Independent Budget Analyst staff
- Conducted ride-a-longs with Transportation Department field crews to obtain an understanding of operations.

Finding 2: To assess the Transportation Department's efforts to address unimproved streets and alleys, we:

- Analyzed Transportation Department descriptive and locational data on unimproved streets and alleys, including an analysis differentiated by City Council District.
- Reviewed City budget data associated with unimproved streets and alleys.
- Reviewed Transportation Department's 5-year Pavement Management Plan, which was issued January 2024, concurrent with the conclusion of our audit. As a result, OCA provided only preliminary observations on the content of the Pavement Management Plan.
- Interviewed key staff and stakeholders:
 - Deputy Chief Operating Office
 - Transportation Department Director
 - Department of Race and Equity Director
 - Engineering and Capital Projects Director and management staff
 - Selected City Council Members and staff
 - Street Maintenance Program management and supervisory Staff
 - Department of Financial Management executive and managerial staff
 - Independent Budget Analyst staff

Finding 3: To determine whether the Transportation Department conducts regular pavement condition assessments to optimize the street maintenance program, we:

- Reviewed best practices and other relevant guidance information from the Government Finance Officers Association and the Federal Highway Administration regarding pavement condition assessments.
- Reviewed Transportation Department historical budget requests for pavement condition assessment, and resulting budget allocations, if any.
- Analyzed historical pavement condition assessments for the City, and compared to recent results to determine accuracy, consistency, and reliability of data, as well as whether inaccurate pavement condition assessment data may have negatively affected street maintenance prioritization and other factors.
- Reviewed Transportation Department's 5-year Pavement Management Plan, which was issued January 2024, concurrent with the conclusion of our audit. As a result, OCA provided only preliminary observations on the content of the Pavement Management Plan.
- Interviewed key staff and stakeholders:
 - Deputy Chief Operating Office
 - Transportation Department Director
 - Department of Race and Equity Director
 - Engineering and Capital Projects Director and management staff
 - Selected City Council Members and staff

- Street Maintenance Program management and supervisory Staff
- Department of Financial Management executive and managerial staff
- Independent Budget Analyst staff

Finding 4: To ascertain the necessity for a long-term funding strategy to achieve the City's street condition goals, we:

- Reviewed Transportation Department street condition goals, historical and projected funding to achieve those goals, and analyzed various funding scenarios' impact on projected street conditions.
- Reviewed Government Finance Officers Association best practice and guidance information pertaining to capital infrastructure financial planning.
- Analyzed current and potential revenue sources that could be reasonably applied to the City's street maintenance program; determined whether current or potential revenues would be sufficient to achieve the City's street condition goals.
- Reviewed existing City asset planning guidelines and funding strategies, including Council Policy 800-16, Public Utilities Department's Five-year Outlook, and the Stormwater Funding Strategy.
- Benchmarked relevant funding strategies from other municipalities, including:
 - Phoenix, AZ
 - Chula Vista, CA
 - Dallas, TX
 - San Jose, CA
 - Long Beach, CA
 - Sacramento, CA
- Reviewed Transportation Department's 5-year Pavement Management Plan, which was issued January 2024, concurrent with the conclusion of our audit. As a result, OCA provided only preliminary observations on the content of the Pavement Management Plan.
- Interviewed key staff and stakeholders:
 - Deputy Chief Operating Office
 - Transportation Department Director
 - Engineering and Capital Projects Director and management staff
 - Department of Race and Equity Director
 - Selected City Council Members and staff
 - Street Maintenance Program management and supervisory Staff
 - Department of Financial Management executive and managerial staff
 - Independent Budget Analyst staff

Finding 5: To ascertain the Transportation Department’s capacity to expend available resources, we:

- Reviewed the Transportation Department’s budget allocations and expenditures for the street maintenance program for the scope period.
- Analyzed factors that may have limited the Transportation Department’s expenditure of allocated budgets, including the COVID-19 pandemic, a limited contractor pool, supply chain disruptions, organizational changes, among others.
- Reviewed options for Transportation Department to conduct certain street maintenance activities with City forces instead of contractors.
- Reviewed Government Finance Officers Association best practices and guidance information pertaining to tactical plans to achieve strategic goals.
- Reviewed Transportation Department’s 5-year Pavement Management Plan, which was issued January 2024, concurrent with the conclusion of our audit. As a result, OCA provided only preliminary observations on the content of the Pavement Management Plan.
- Interviewed key staff and stakeholders:
 - Deputy Chief Operating Office
 - Transportation Department Director
 - Engineering and Capital Projects Director and management staff
 - Department of Race and Equity Director
 - Selected City Council Members and staff
 - Street Maintenance Program management and supervisory Staff
 - Department of Financial Management executive and managerial staff
 - Independent Budget Analyst staff

Data Reliability

We primarily analyzed budget, organizational, and performance data auditors extracted directly from SAP. We assessed the reliability of these data sets by reviewing existing information about the data and the systems that produced them and interviewing Transportation Department and Department of Finance staff knowledgeable about the data. In addition, reviewed street condition data collected for the Transportation Department by a contracted vendor, and the subsequent modeling data generated by Cartograph, Transportation Department’s software application that generates data to inform maintenance prioritization within the City’s street network. We determined that the data were sufficiently reliable for the purposes of responding to our objectives.

Internal Controls Statement

We limited our review of internal controls to specific controls relevant to our audit objectives, described above. We tested the following controls:

- Oversight and monitoring of the Transportation Department's budget and expenditures.
- Oversight and monitoring of street maintenance prioritization
- General controls over and usage of Cartograph modeling data
- Incorporation of equity principles in the City's street maintenance program

Compliance Statement

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



THE CITY OF SAN DIEGO

M E M O R A N D U M

DATE: February 7, 2024

TO: Andy Hanau, City Auditor, Office of the City Auditor

FROM: Bethany Bezak, Director, Transportation Department

SUBJECT: Management Response to the Office of the City Auditor's Performance Audit of the City's Street Maintenance Program

This memorandum serves as the Management Response to the Performance Audit of the City's Street Maintenance Program. Management appreciates the Performance Audit prepared by the Office of the City Auditor and thanks the staff involved. Management agrees or partially agrees with all recommendations and notes that a majority of the recommendations are in process or will be implemented shortly.

The City of San Diego has the 2nd largest roadway network in California with over 6,600 lane miles. The recent condition assessment completed in 2023 resulted in an average Pavement Condition Index (PCI) score of 63 compared to a 71 in 2016. Overall, the network has deteriorated as expected primarily due to the historic inconsistent maintenance and rehabilitation funding. In order to communicate and display the City's pavement needs and street selection process, the Department has developed the Pavement Management Plan (PMP; Plan) which was published in January 2024. This Plan is the first comprehensive asset management plan for the City's street network and includes the new condition assessment data, service level goals, financial needs to reach those goals, and it resulted in a 5-year plan that identifies the planned maintenance and rehabilitation on specific segments if adequate funding is provided. The Plan also includes an in-house paving feasibility study and how equity has been incorporated into the Pavement Management Plan.

Recommendation 1.1

The Transportation Department (Transportation), in consultation with the Mayor's Office, Chief Executive Office, and/or other relevant departments, should develop a comprehensive 5-year pavement management plan to provide public transparency over the City's street maintenance practices. Transportation should include the following reporting elements in the plan:

- a. Program overview;
- b. Street selection prioritization factors;

- c. Listing of planned projects over 5 years, including the type of maintenance that is planned (slurry, overlay, etc.) that is updated annually;
- d. Reasons why projects or segments were postponed or cancelled;
- e. Performance goals, including but not limited to, the number of miles needed to reach its target PCI goal, the number of miles planned and completed, trends over at least the last 3 years, and any explanations regarding deviations from the goal;
- f. Goals and performance trends on addressing equity; and
- g. Any other information Transportation deems essential.

Management Response: Agree. The Transportation Department published the Pavement Management Plan (Plan) in January 2024, which includes each of the items listed within this recommendation. The Department will update the Plan annually to include trends towards performance goals (10-year plan mileage goal vs. funded mileage vs. constructed mileage) and include trends towards equity goals (unimproved street budget requested mileage vs. funded mileage vs. constructed mileage). This recommendation will be fully addressed once the Plan is updated in the first quarter of FY26 to display performance goals, after implementation of Year 1 (FY25).

Target Implementation Date: First quarter of FY26, to be updated annually afterwards.

Recommendation 1.2

The Transportation Department should include a disclaimer on the Streets.SD website regarding reasons why street maintenance projects may be cancelled or postponed and provide contact information for residents to obtain additional information about why a specific street maintenance project or segment was cancelled or postponed. Additionally, Transportation should include its pavement management plan on its department website. (Priority 2)

Management Response: Agree. The Transportation Department has updated streets.sandiego.gov to include reasons why street segments are postponed or removed from projects. Additionally, the Transportation Department has included the Pavement Management Plan on their website at: <https://www.sandiego.gov/transportation/programs/pavement-management-plan>. The Transportation Department does not have the resources to address questions regarding all street segments shown on streets.sandiego.gov; however, contact information regarding project-specific changes will be provided in public facing DotMaps. This recommendation will be fully addressed once updates to streets.sandiego.gov and public facing DotMaps are updated, by July 2024.

Target Implementation Date: July 2024

Recommendation 1.3

The Transportation Department (Transportation) should develop a new Standard Operating Procedure that requires the development and completion of a 5-year pavement management plan. This procedure should also set forth the requirement for the plan to be presented annually to the Active Transportation and Infrastructure Committee and/or the City Council, and provide specific guidance regarding information that should be contained in the plan.

The procedure should require that all the information listed in Recommendations 1.1 and 1.2 be included in the pavement management plan, in addition to any other information that Transportation believes is essential. (Priority 1)

Management Response: Agree. The Transportation Department will develop a Standard Operating Procedure that identifies how the 5-year paving plan will be developed, updated, and presented to the Active Transportation and Infrastructure Committee, another City Council Committee, or the City Council. This recommendation will be fully addressed with development of the Standard Operating Procedure in July 2024.

Target Implementation Date: July 2024

Recommendation 2.1

The Transportation Department, in consultation with the Department of Race and Equity, the Mayor's Office, and other stakeholders, should develop a strategy on how to address unimproved streets and alleys, such as whether and how to bring them up to City standard, and include this strategy in the pavement management plan. For example, Transportation could include in its pavement management plan some of the following options and/or others to address unimproved streets and alleys:

- a. Develop an incremental plan to bring these streets up to City standard, such as targeting a certain number of miles or number of streets to complete each year;
- b. Create a dedicated funding source specifically to address unimproved streets and alleys; and
- c. Continue to treat unimproved streets and alleys as outside the City's network and address them as funding becomes available.

The Standard Operating Procedure recommended in Recommendation 1.3 should require that pavement management plan incorporate the City's strategy for unimproved streets and alleys. (Priority 1)

Management Response: Agree. The Transportation Department incorporated strategies to prioritize and forecast funding needs for improvement of unimproved streets and alleys in the Pavement Management Plan. The process to request budget and prioritize unimproved streets and alleys for funding will be incorporated into the Standard Operating Procedure. This recommendation will be fully addressed with development of the Standard Operating Procedure in July 2024.

Target Implementation Date: July 2024

Recommendation 3.1

The Transportation Department (Transportation) should include a goal in its pavement management plan, as referenced in Recommendation 1.1, to conduct pavement condition assessments at least every 4 years to ensure that it is using the most accurate and current information when selecting streets for maintenance. The Plan should also indicate when the last condition assessment was conducted and when the next assessment is scheduled to be completed. Additionally, Transportation's Standard Operating Procedure, as referenced in

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Recommendation 1.3, should include the intent to prioritize and initiate a funding request for the pavement condition assessment every 4 years as part of Transportation's budget request. (Priority 1)

Management Response: Agree. The Transportation Department has included the goal to perform pavement condition assessments at least every 4 years in its Pavement Management Plan and has also included a budget request for the pavement condition assessment in the Fiscal Year 2025-2029 Five Year Financial Outlook. The Transportation Department will incorporate initiating a budget request every 4 years into the Standard Operating Procedure. This recommendation will be fully addressed with development of the Standard Operating Procedure in July 2024.

Target Implementation Date: July 2024

Recommendation 4.1

The Transportation Department (Transportation) should develop a 5-year, long-term funding strategy to meet its present and future capital and operational needs for street maintenance. This long-term funding strategy should include the following scenarios that tie funding needs to expected service levels and resulting changes to the street network's overall condition index score:

- Scenario A: If funding levels stay the same, demonstrate how the street network's estimated average PCI will decline over five years and result in a backlog of deferred maintenance.
- Scenario B: Show how the street network's estimated average PCI score will change based on actual and potentially identified revenue sources (or increases) and identify resultant changes in the City's backlog of deferred maintenance.
- Scenario C: Show the financial investment that is needed to achieve the City's desired estimated average PCI score.

This funding strategy should be updated and presented annually to the Active Transportation and Infrastructure Committee and City Council in concert with Transportation's pavement management plan as specified in Recommendation 1.1.

Transportation should work with the City of San Diego's Department of Finance to review long-term funding options and include these options in the funding strategy, such as: continued / increased reliance on the General Fund and special revenue funds, general obligation bonds, additional revenue sources, and any other options that may significantly contribute to closing the existing funding gap.

The Standard Operating Procedure recommended in Recommendation 1.3 should require that this information be included in each annual pavement management plan. (Priority 1)

Management Response: Agree. The Transportation Department included the recommended funding scenarios in the Pavement Management Plan and will update the funding strategies annually and present them at the Active Transportation and Infrastructure Committee, or another City Council Committee, or the City Council. The process to run the scenarios and develop the funding strategy will be included in the Standard Operating Procedures. This

recommendation will be fully addressed with development of the Standard Operating Procedure in July 2024.

Target Implementation Date: July 2024

Recommendation 5.1

The Transportation Department, in collaboration with the Engineering and Capital Projects Department and other City departments as applicable, should include in its pavement management plan as recommended in Recommendation 1.1, a discussion of all significant obstacles to completing targeted street repair mileage each year. This discussion should also include strategies being utilized to overcome these obstacles (to the extent they are within the City's control), increase the Street Maintenance Program's capacity to meet expected mileage goals, and their effectiveness in doing so. Discussion should also include measurable performance metrics where applicable (such as the vacancy rate and hiring timelines for program staff).

The discussion should include how the strategies are being utilized to address the following issues:

- a. Inconsistent and unpredictable street maintenance funding;
- b. Updates in the program's structure and requirements, such as the transfer of capital repair work to E&CP and new requirements to incorporate ADA improvements into street maintenance projects;
- c. Staff shortages and turnover;
- d. Limited street maintenance contractor pool, including analysis of bringing additional street maintenance operations in-house;
- e. Industry capacities and price escalations that can impact the annual mileage goals.
- and
- f. Any additional issues that limit capacity.

The Standard Operating Procedure in Recommendation 1.3 should require that this information be included in each annual Pavement Management Plan. (Priority 1)

Management Response: Agree. The Transportation Department included current challenges and potential strategies to address these challenges in the Pavement Management Plan. The requirement to include this in the Pavement Management Plan will be included in the Standard Operating Procedure. This recommendation will be fully addressed with development of the Standard Operating Procedure in July 2024.

Target Implementation Date: July 2024

In summary, Management, like the Office of the City Auditor, identified the need for a comprehensive Pavement Management Plan and more robust transparency into our street maintenance and selection process. The Transportation Department has worked diligently over the last 2 years to develop this plan to serve as the framework and baseline moving forward. The plan identifies a goal to reach a PCI of 70 and the investment of \$1.9B required over the next 10 years in order to achieve this. Finding a dedicated and consistent funding source for the pavement program is the most critical component to improving the overall performance of the City's street network.

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Thank you for the opportunity to provide responses to these recommendations. Management appreciates your team's professionalism throughout this review.



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Director

Transportation Department

BB/ph

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