James Johnson
City of Long Beach
Councilmember, Seventh District

R-12
REVISED

Date: July 16, 2013

To: Honorable Mayor and Members of the City Council

From: Councilmember James Johnson, Seventh District JJ
Councilmember Gary DeLong, Third District GD
Councilmember Steven Neal, Ninth District SN

Subject: Saving Money While Improving Our Streets in FY 2013

RECOMMENDATION:

Receive and file document regarding the results from the second year of citywide residential street maintenance.

DISCUSSION

On May 3, 2011, the City Council passed a new street maintenance policy for our residential streets. After years of neglecting maintenance, and allowing our streets to deteriorate to the point where repair costs exceeded maintenance by 700% to 1300%, we implemented a citywide policy that incorporates maintenance (specifically, slurry seals) into our Capital Improvement Program. This more efficient, effective plan will save millions of dollars while improving our streets.

In the second year of implementation preventative maintenance, over 8.0 miles of residential streets will be slurry sealed in District 7 and over 24.7 miles will be slurry sealed citywide. According to a 2008 study by the City Auditor's Office, "the cost of deferring maintenance at critical junctures in a street's life cycle can mean the difference between applying a slurry seal treatment at a cost of $0.30 per square foot for a street still in good condition and applying an overlay treatment at a cost of $2.34 per square foot for a street in deteriorating condition—an expense almost seven times as great" (see attached excerpt). We spent approximately $766,050 for slurry sealing in the 7th District and $2,743,808 citywide. Thus, using the City Auditor's numbers, this preventive maintenance in FY 13 saved $5,975,190 for the 7th District and $21,401,702 citywide by avoiding the cost of the more expensive treatment.

FISCAL IMPACT

Implementation of the new street maintenance policy in FY 13 saved the City $5,975,190 for the 7th District and $21,401,702 citywide over the long run. Continued maintenance in FY14, along with the implementation of the new pavement management system, will result in further long-term savings.

Attachment: Excerpt from Long Beach Streets Review Phase II, pp. 2-3 and 13-14

Executive Summary

This report was commissioned by the Office of the City Auditor of Long Beach and was prepared by Public Financial Management (PFM). The report represents Phase II of the Long Beach Streets Review ("the Review"). In Phase I of the Review, PFM conducted an assessment of the Long Beach Streets Capital Improvement Program (CIP) that identified how the City could make more effective and full use of Streets CIP funding sources; improve budget practices; reduce project backlogs; improve project tracking; and address staffing levels.

The Phase II Review builds on Phase I and focuses on other issues regarding the delivery of streets capital improvements. The Phase II Review is organized into five main sections:

- An assessment of the current condition of Long Beach's streets, and an analysis of how various levels of investment in Long Beach's streets infrastructure may affect the condition of the City's streets over time.
- A comparison of Long Beach's street conditions and streets maintenance practices in relation to other California cities.
- A review of DPW's contracting practices and general approach to contract management.
- A comparison of DPW costs relative to those of other California cities.
- An examination of DPW's streets infrastructure performance measure practices.

The following are PFM's key findings and recommendations for Phase II. These recommendations are followed by the recommendations for Phase I for reference.

- **Invest early in preventive street maintenance in order to realize the greatest potential cost savings.** Extensive research has demonstrated that it is more economical in the long run to invest early in maintaining streets that are still in good condition than it is to defer maintenance until streets have deteriorated and more expensive repairs are needed. According to a March 2008 The Road Information Program (TRIP) report, a preventive approach to street maintenance can reduce the life cycle costs of a pavement surface by approximately one-third over a 25-year

period.[1] Specifically in the case of Long Beach, the cost of deferring street maintenance at critical junctures in a street's life cycle can mean the difference between applying a slurry seal treatment at a cost of $0.30 per square foot for a street still in good condition and applying an overlay treatment at a cost of $2.34 per square foot for a street in deteriorating condition – an expense almost 7 times as great.

- **Improve oversight mechanisms for contractor work.** Given current DPW staffing levels, any proposed increase in engineering and/or maintenance project volume would require DPW to delegate more management responsibility to its contractors. In order to ensure proper contractor oversight under this arrangement, DPW should increase its use of project tracking reports and electronic communication technology, such as a comprehensive project website. Such a website would include all deliverables and important notifications, as well as a publicly accessible portion to keep citizens aware of traffic delays and construction progress. DPW can further increase contractor oversight through the use of quantitative performance measures, many of which are outlined in this report.

- **Implement a comprehensive kick-off meeting prior to the beginning of every project.** This kickoff meeting should establish clear objectives, expectations, and lines of accountability for all involved parties in order to improve communication and coordination. Problems and solutions should be documented as they occur and posted on an open forum for the group to review. Following the completion of a project, a project coordinator should use the project tracking system and log to prepare reports that will aid future project managers and build institutional knowledge.

- **Extend the use of performance measurements.** While DPW currently publishes a list of several qualitative and quantitative metrics which it uses to measure performance, PFM recommends that this list be expanded in order to enable DPW to more efficiently allocate scarce resources; aid DPW in the development and justification of budget proposals; and hold DPW more accountable to the general public for its stewardship of Long Beach's streets. Specifically, DPW should track more detailed information on an annual basis regarding the average pavement condition of its streets infrastructure by street type and geographic area, as well as the total number of lane miles that are slurry sealed, repaved, and reconstructed. In addition, DPW should make greater use of efficiency metrics to gauge the cost effectiveness of key performance outputs. For ease of analysis, DPW should reclassify its expenditure costs in order to better reflect the relationship between street repair costs and street types.

[1] The Road Information Program (TRIP) Report (March 2008), "Keep Both Hands on the Wheel: Metro Areas with the Roughest Rides and Strategies to Make our Roads Smoother," 19. http://www.tripnet.org/UrbanRoadsReportMarch2008.pdf.

The Importance of Investing in Preventive Street Maintenance

It is important to recognize that while deferring street maintenance in the short run may result in a temporary decrease in expenditures, the long run costs of adopting such an approach will almost always exceed the short run savings.

Two key drivers help to explain why deferring street maintenance typically results in significant increases in long run total costs. The first concerns the rate at which street quality declines over time. Controlling for climate and traffic volume, streets tend to deteriorate only 40 percent in quality in the first 75 percent of their useful life, but then experience another 40 percent drop in quality in the next 12 percent of their useful life.[8]

The second concerns the pronounced cost differential between repairing a street in poor condition and repairing a street in good condition. It has been estimated that deferred street repair can cost up to five times as much as early street repair.[9] As the preceding section explains, due to rising construction prices, this gap could potentially widen further.

Accordingly, **a short-term targeted investment in maintaining streets that are still in good condition will yield significant cost savings over their useful life.**

DPW engineers estimate that an average street in Long Beach will last approximately 20 years. Using current DPW data, the following chart depicts an average Long Beach street's expected life cycle, along with associated maintenance costs at various pavement condition levels. The chart reinforces the general notion that a preventive approach to street maintenance is preferable to a "worst-first" approach, given that the marginal cost of rehabilitating a street accelerates as the quality of a street deteriorates. In addition, the chart indicates specific points along the curve where a targeted investment in street maintenance can realize significant savings. For example, the chart shows that the last opportunity in an average street's life cycle to apply a slurry seal treatment at a cost of $0.30 per square foot is approximately 16.5 years, after which time the cost of maintenance increases 680 percent to $2.34 per square foot for an overlay treatment.

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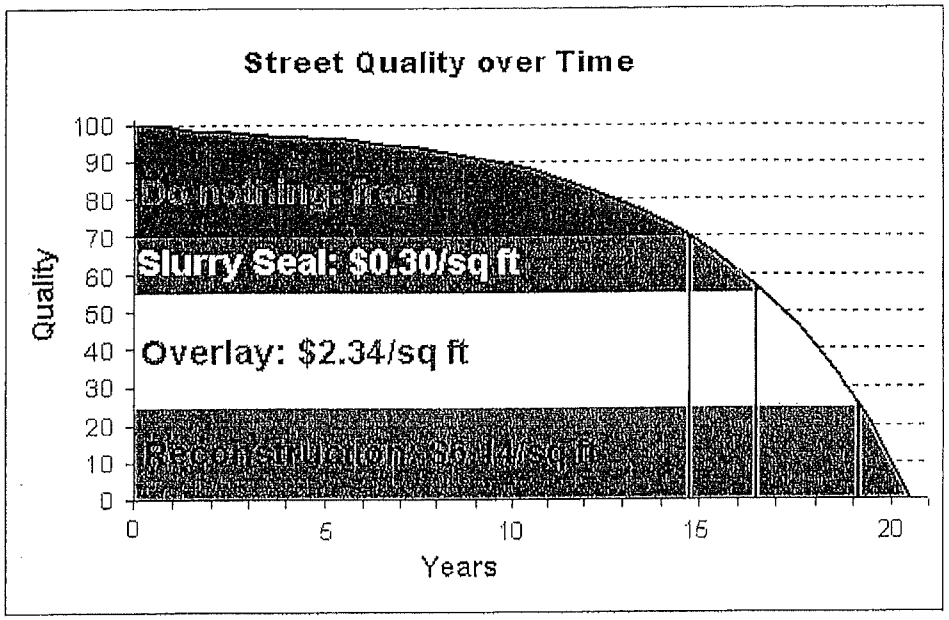
[8] Metropolitan Transportation Commission (March 2000). *The Pothole Report: An Update on Bay Area Pavement Conditions,* 11. http://www.mtc.ca.gov/library/pothole/pothole.pdf.
[9] Ibid.



The Effect of Different Funding Scenarios on Long Beach's Average Street Condition

The preceding discussion has shown why the return on investment in street maintenance is sensitive not only to size but also to timing. In order to illustrate how Long Beach's average street quality might be affected by both of these investment considerations, PFM worked with DPW's pavement management engineer to run several different funding scenarios through Paver to see what their effects would be on the average condition of Long Beach's streets over a 15-year period. Given the uncertainty of future PPI levels, we ran each scenario assuming 4, 6, and 8 percent annual inflation. These inflation assumptions are generally in line with recent economic forecasts.[10]

It should be noted that the following simulations assume a fully optimized use of street rehabilitation resources. In other words, resources are allocated based on their relative rate of return on investment on a citywide basis, without regard to other potential policy considerations. If a different approach were taken to prioritize how resources are allocated, then the street quality curves presented below would have a different shape. It is important for the City to weigh these potential trade-offs between equity and efficiency in the course of developing its overall street maintenance investment strategy.

[10] The Association of General Contractors (AGC), *Construction Inflation Alert* (March 2008), 14. http://www.agc.org/galleries/econ/AGC_CIA08_webFinal.pdf.