


Date: May 17, 2021

To: Thomas B. Modica, City Manager 

From: Eric Lopez, Director of Public Works 
John Gross, Interim Director of Financial Management 

For: Mayor and Members of the City Council

Subject: **Funding Street Improvements through Bond Issuance**

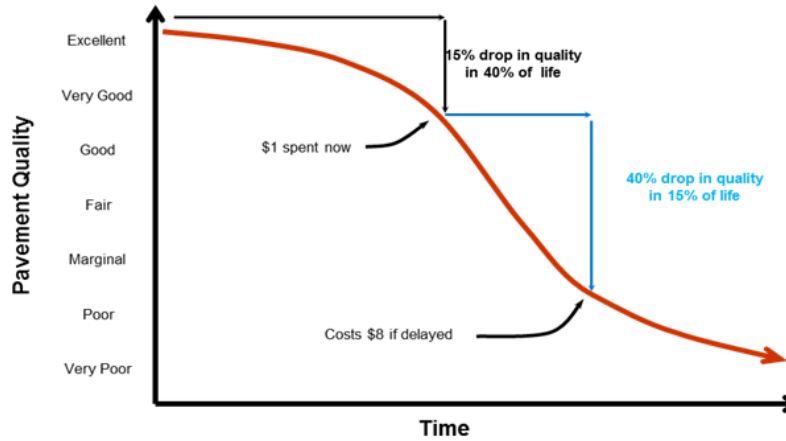
At its November 17, 2020 meeting, the City Council directed staff to research the issuance of debt to accelerate street and alley improvements. The City Council also requested that these financial instruments be accompanied by a plan to address the City's worst streets and alleys.

This memorandum provides a report and preliminary assessment on these topics. In summary, bonds can likely be issued for street repair purposes. However, until the City Council provides parameters for the funding of street maintenance bonds and the funding source(s), it is not clear what the impact will be on overall pavement condition, including whether there would be long-term improvements to overall street condition. As outlined in this memorandum, this is due to the magnitude of citywide street repairs needed as a result of many years of deferred maintenance. In addition, any approach to addressing the worst streets and alleys must be considered alongside the goal of achieving the highest overall City street pavement condition, as the two goals can be in conflict. Furthermore, President Biden has just proposed a major infrastructure bill. Should that bill be enacted, there may be substantive funding opportunities for the City's streets and bridges. Based on this preliminary research and report, a number of City Council policy questions have been identified and will be addressed should the City Council desire to proceed with a potential revenue bond for street improvements.

Background

Long Beach has over 1,000 centerline miles of streets and alleys valued at over \$2.28 billion. Street construction provides a base for the overlay surface that is driven on. It is important to maintain a street's surface; not only to provide a smooth ride, but also to protect the street's base from deteriorating and failing. Once a street's base has failed, overlays will be ineffective and full or partial reconstruction may be the only solution. Full reconstruction is very expensive. As a result, experts strongly recommend that sufficient funds be invested to prevent the street base from failing and to repair a street before its condition deteriorates to the point where repair costs increase dramatically. The cost to repair a street in poor condition, while very high, does not increase that much over time if it is not reconstructed. The chart below shows the dramatically higher costs to repair a street in poor condition (base deterioration) rather than one in fair or better condition. The chart also shows that deterioration from fair to poor (base failure) can happen over a relatively short period.

Pavement Condition and Cost over Time without Maintenance
 (\$1 to maintain a road in good condition vs. \$8 to repair a road in poor condition)



Pavement programming decisions and how to spend street maintenance funding are guided by the City’s Pavement Management Program (PMP). The City’s PMP is regularly updated, with the next update anticipated to be completed in Summer 2021. In addition to using the PMP, pavement decisions are also guided by City Council policy directions, the approved Measure A Spending Plan, and by ensuring coordination with other projects being conducted by developers, utility companies, and other agencies.

Current Pavement Condition and Expenditure Levels

Per the City’s latest PMP, which was updated in 2018, the City’s roadway network is in overall “fair to marginal” condition with an average pavement condition index (PCI) score of 58 out of a possible 100. The score of 58 is at the high end of the “fair” overall condition range of 48 to 60. The 2018 PMP also identified a 23 percent backlog of “poor” and “very poor” streets requiring major reconstruction. The 23 percent backlog is high, with a backlog of 10 to 15 percent considered to be a maximum desirable backlog. Backlogs greater than 10 to 15 percent can become very difficult to manage and likely require large rehabilitation expenditures. The chart below provides a snapshot of the City’s Street System condition and the different costs associated with each street condition.

PCI Range, Street Rating, Average Cost, Repair Approach, and Percentage of City Streets in Each Rating

PCI Range	Rating	Relative Avg. Cost per Sq. Foot*	Repair Approach	Streets in This Condition
85-100	Excellent	\$3-4 per sq. foot	Like new condition. Little to no maintenance required. Routine maintenance as-needed.	14%
70-85	Very Good	\$3-10 per sq. foot	Routine maintenance such as patching and crack sealing with surface treatments such as seal coats or slurries.	19%
60-70	Good	\$13-20 per sq. foot	Heavier surface treatments and thin overlays. Localized panel replacements.	12%
40-60	Fair to Marginal	\$13-25 per sq. foot	Optimum timing for thin to moderate overlay. Early lower costs to repair with greater returns.	32%
30-40	Poor	\$20-30 per sq. foot	Partial structural failure. Sections will require very thick overlays, surface replacement, base reconstruction, and possible subgrade stabilization.	19%
0-30	Very Poor	\$25-40 per sq. foot	Structural failure. Requires reconstruction which is the most expensive and impactful repair method.	4%

*Average cost is provided as references for asphalt concrete roadway only, actual costs vary greatly depending on actual field conditions and associated concrete improvements required to be improved.

As previously mentioned, restoring poor and very poor streets is expensive, and spending limited funds on poor streets can mean deferring maintenance on good or fair condition streets. As a result, the good or fair condition streets may then deteriorate and themselves become cost prohibitive to repair, creating a spiraling deterioration of street conditions. It is also important to note that public complaints are almost exclusively generated by streets in the poor and very poor category. As a result of the conflict between repairing poor and very poor streets and maintaining overall street condition, it is important to find an acceptable balance between repairing poor and very poor streets and maintaining the City’s overall PCI. This is a policy decision that can be informed by engineering data and by preparing various investment scenarios that will evaluate the impacts on overall City street conditions. To assist with finding an acceptable balance and to help address the backlog of streets in poor/very poor condition, City staff is currently exploring the financial and logistical feasibility of establishing an in-house field crew that can cost-effectively perform crack and slurry seal street maintenance to help extend the life cycle of streets and prevent them from falling to the marginal or poor condition. If feasible, this strategy can save the City significant funds and allow staff to shift its focus to streets in poor and very poor condition.

It is important to note that to repair all the City’s streets over five years would cost an estimated \$1.1 billion, or about \$211 million per year for five years. To repair only streets in poor or very poor condition and reduce the backlog to 10 percent, it would cost the City about \$136 million per year for five years. The costs associated with both scenarios far exceed the funding available. Staff estimates that a minimum annual budget of \$57.5 million for street repairs is required to maintain the City’s PCI at 58. This amount includes repairing streets in the marginal to very good condition range and a limited number of streets that are in poor condition. In general, the lower the PCI, the higher the annual cost to maintain the PCI. If the City is able to improve its overall PCI as a result of major investments in the roadway network, the annual cost to maintain the roadway at that higher PCI will decrease. The City, on average, has budgeted around \$30 million annually on street improvements, well below the minimum required to maintain the overall current condition of the City’s streets. For the past couple of years, the City has been able to increase the budgeted amount for street repairs. In FY 21, \$40.8 million has been budgeted for streets (that amount includes one-time funding of \$4.5 million diverted from the Fleet Fund). The table below summarizes the information provided.

Annual Street Funding to Fix All or Maintain Current PCI vs. Current Funding

(\$ in millions)

Scenario	Major Streets	Local Streets	Alleys	Total
5-Year Fix All (one year shown)	64.2	127.6	19.6	211.4
Minimum to Maintain PCI	24.0	29.5	4.0	57.5

The “minimum” annual cost to maintain streets, \$57.5 million, focuses mainly on keeping fair and good streets from failing and maintaining the highest possible PCI for the investment, and does not focus on addressing the backlog of poor and very poor streets. Maintaining streets at a 58 PCI, while also addressing poor and very poor streets, will cost significantly more than \$57.5 million annually.

The current FY 21 funding for street paving (\$40.8 million) includes Measure A, County funds, and State Gas Tax funds, including SB 1 and one-time funding of \$4.5 million that would normally fund replacing old City vehicles. Since Measure A was approved in 2016, over 120 miles of streets have been repaired and 5.5 miles of dirt alleys have been paved. This recent

increase in investment has been beneficial, but it has still not been sufficient for the City to reduce the significant backlog of streets in poor/very poor condition. However, if the backlog is reduced to an “acceptable” level of 10 to 15 percent, the City’s existing maintenance budget may or may not be sufficient to maintain the higher average PCI. This question will be addressed in the upcoming PMP update that will be finalized this summer.

As summarized above, the current level of street funding is insufficient to halt the continued degradation of the City’s overall roadway network. As part of the 2021 PMP update, staff will focus on identifying alternative scenarios that provide a balance between maintaining the City’s overall PCI and addressing the streets that are in poor and very poor condition. An extensive use of crack and slurry seals can help achieve the appropriate balance. Crack and slurry seals protect streets from water intrusion, the primary cause of subsurface pavement failure. When water gets underneath the pavement, it erodes the pavement base and causes structural failure.

The City Council’s November 17, 2020 motion, requests that any bond funding include a plan to tackle the worst streets and alleys in the City. If the City Council directs staff to move forward with bond funding, the plan will include the worst street and alleys, but additional City Council direction will be needed regarding the goal to achieve the right balance between achieving the best possible overall street conditions citywide, as opposed to the desired emphasis placed on the worst streets and alleys. A key approach to addressing this delicate balance may involve performing more in-house street maintenance work, as outlined above.

The policy question for any street maintenance bond funding has to consider the relative investment of improving the overall condition of streets over the long-term versus the amount invested specifically in the worst streets (and alleys). This is essentially the same policy question that arises with the normal street maintenance question that was described earlier. As part of the 2021 PMP update, staff are investigating options to balance City Council’s priorities of maintaining the City PCI street condition index and best management practices for streets while also addressing the worst streets and alleys within the City’s funding constraints whether for normal street funding, for extra funding that may come from federal infrastructure funding, or from a bond issue.

Issuing Debt for Street Improvements

The use of debt to improve streets is a common approach throughout the country. Often, it is done using a new revenue source to pay debt service (principal and interest) on the bonds. If a new funding source is used for debt service, one-time major road improvements can be made while still continuing the ongoing investment in street maintenance. For example, in 2020, voters in Omaha, Nebraska approved a new tax to allow for upfront street repairs while still maintaining the existing ongoing funding for repairs.

Alternatively, the annual debt service on street repair bonds could be paid using existing funding sources, but that will reduce funding for other needs, potentially including annual street maintenance. Staff caution that reductions in the existing annual street maintenance budget to pay debt service on street maintenance bonds may be problematic in terms of longer-term overall street condition because less money will be available annually for street maintenance.

Annual debt service is estimated at approximately \$950,000 for each \$10 million of bonds, assuming the bonds were a typical 15-year term at a market rate of 3.5 percent at the end of 2021. For example, a \$100 million par value bond issue would require debt service of about \$9.5 million a year.

From a technical viewpoint, the structure of street maintenance bonds may vary depending on the funding source used for the debt service. Using an existing funding source instead of a dedicated new funding stream would likely require pledging major City assets as collateral in case the City failed to pay debt service. Because these are the same assets that would be used as collateral for an emergency bond issue, street improvement bonds that do not have a dedicated and guaranteed funding source will reduce the City's financial flexibility, depending on the size of the street improvement bond. In addition, a bond issue that does not have a new dedicated funding source will greatly reduce the City's financial flexibility in difficult financial times as bond debt service is very difficult to adjust, while adjusting normal spending on street maintenance would be easy to adjust.

Funding of Debt Service for Street Bonds

The City Council could consider asking voters to approve a new tax or assessment to fund major street improvements. A voter approved bond issue and tax or assessment increase would provide a dedicated new funding source for debt service on a bond issue, or for a series of annual bond issues, without negatively impacting annual maintenance funding. Alternatively, the City Council could reallocate existing funding sources to fund street bond debt service, such as funds currently used for annual street maintenance, infrastructure funding typically used for buildings and park maintenance, and any other funds used for various city operations.

The only significant unplanned ongoing source of revenue for capital and operations funding currently available in the City is Measure A, beginning in FY 24. This new funding extension was approved in 2020, and potential projects or uses have not yet been planned. Under the extension, no change in revenue will occur before FY 23. Notwithstanding the voter approved extension, overall Measure A revenue will actually decrease beginning in FY 23 because the overall tax rate decreases from FY 23 through FY 27. This decrease in the tax rate is required so as not to exceed the State cap on local tax rates. At present, it is assumed that current Measure A funding for public safety operations will be maintained by the City Council, and that all other Measure A money from voter approval will be used for infrastructure or other one-time purposes.

The "new" funds available through the Measure A extension will be approximately half of what was available in prior years for capital and one-time purposes until the tax rate increases in FY 28. Through FY 22, annual Measure A funding allocated for infrastructure and other one-time purposes was about \$34 million a year and only a portion of that was allocated specifically to street repair. For reasons described, namely the temporary lower tax rate, Measure A funding normally allocated to infrastructure is expected to decline from \$34 million a year to about \$17 million a year from FY 23 through FY 27, which may be significantly less than the \$17 million in FY 23. Beginning in FY 28, unplanned Measure A funding, potentially available for infrastructure purposes, will increase to about \$40 million a year, an amount similar to what it was in FY 22 after adjusting for inflation. Given the decline in overall Measure A funding between FY 23 through FY 28, it seems likely that Measure A funding available for streets will

decline rather than increase, unless the City Council chooses to dedicate all the “new” Measure A funding to streets, as opposed to also providing funding for parks, special police neighborhood work, or other one-time needs. Beginning in FY 28, funding for capital and one-time needs would be restored to FY 22 levels as the tax rate will increase to the 1 percent it was in FY 22. The City Council could choose to move Measure A funds currently used for police and fire services to capital funding, but that would likely result in significant public safety service impacts.

Improving Streets Now (One-Time) Compared to Annual Repairs and Maintenance

If the City Council chooses to use some of the funds normally used to fund annual street maintenance and repairs to instead pay for debt service on street improvement/maintenance bonds, there will be less funding in the future years to repair and maintain roads for the term of the bonds. In the table below, the impact of issuing \$15 million in bonds for each of the first five years (\$75 million in total) is shown over the 20 years that debt service would need to be paid from existing street repair revenue sources. Over the first five years, the City would be able to make about \$52 million in extra repairs, but after that the repair budget would be less by about \$7.1 million a year due to bond debt service. This would ultimately result in \$33 million less for street repairs over time, assuming a 15-year term and an interest rate of 3.5 percent. The City can expect a similar pattern to hold regardless of the amount of the bonds issued.

Funding for Street Repairs Before and After a \$15 m Bond Issue in Each of the First Five Years (Assumes normal spending of \$35 million annually, no new revenue, and a 15 year term for each bond issue)										
Year	2021	2022	2023	2024	2025	2026	2034	2035	2036	2040
Normal street repair funding	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Add bond issue proceeds	14.70	14.70	14.70	14.70	14.70	0.00	0.00	0.00	0.00	0.00
Total normal funding plus bonds	49.70	49.70	49.70	49.70	49.70	35.00	35.00	35.00	35.00	35.00
Subtract debt service cost	(1.42)	(2.83)	(4.25)	(5.66)	(7.08)	(7.08)	(7.08)	(7.08)	(5.66)	0.00
Street repair funding with bonds	48.28	46.87	45.45	44.04	42.62	27.92	27.92	27.92	29.34	35.00
Annual gain/(loss) with bonds	13.28	11.87	10.45	9.04	7.62	(7.08)	(7.08)	(7.08)	(5.66)	0.00
Cumulative gain/(loss) with bonds	13.28	25.15	35.61	44.65	52.27	45.20	(11.41)	(18.49)	(24.15)	(32.64)

Even though bond issues with no new money to pay debt service result in less street repair funding available in the long-term, the impact of inflation will, to some degree, offset the fact that less money is available in the future. Construction costs now are lower than in the future. In addition, an immediate investment in good or fair streets will reduce maintenance costs for some time into the future. However, a limited number of streets can likely be addressed with a bond issue. If routine maintenance money is not available because it is being used for debt service, there will be a negative impact on streets that have not been improved with the bond funding. In addition, the streets the City chooses to repair or improve will have a very large impact on the long-term payment condition as previously described. The chosen focus of the investment—either on maintaining overall long-term street condition or on repairing the worst streets and alleys—may result in very different long-term outcomes.

Because of this highly complex combination of factors involved in balancing upfront bond money for streets, versus reduced annual funding and balancing maximizing street pavement condition versus addressing the worst streets, a study is highly recommended to determine the

best combination of investments and whether upfront expenditures have a positive, neutral, or negative impact if no new money is involved. Another consideration for the study to address is whether funding a lot of street maintenance at one time, such as with a bond issue, would create future maintenance cost bubbles and associated budgetary timing issues that could make funding normal street maintenance more difficult in the future. A study could also help determine what streets could be selected for immediate improvement, so that the most overall net improvement in overall pavement condition would occur over time while still putting an increased priority on the worst streets. If a selection of streets is found that achieves this balance, it would be important that future City Councils commit to following the new pavement management plan for the work completed by bond funding to have lasting positive impacts. There is, of course, no assurance as to what future City Councils may choose to do or prioritize.

In general, because the level of annual funding is not enough to prevent continued deterioration of the streets, staff continues to recommend prioritizing funding to prevent roads in fair to good condition from deteriorating to poor condition. This is the most effective way of preventing or slowing the spiraling cost of street maintenance. At the same time, external funding, potentially coming from the Federal Government, for road repairs could be used to also decrease the City's backlog of streets in poor/very poor condition. This approach is particularly important given that the average condition of our streets is fair, and many streets are on the border of having high repair costs if the City does not perform basic maintenance because of lack of funding.

Many Needs Are Not Currently Funded

Although our roads and streets badly need funding for maintenance and repair, the City is facing many other similar issues and costs from deferred maintenance on its facilities and must simultaneously address many other one-time needs. The condition of sidewalks and associated ADA accessibility issues are a major cost, and there are legal mandates for a minimum level of spending. These minimum levels may be very difficult to achieve and may divert funding away from other priorities. Funding of stormwater systems is an example of another need, and funding necessary to implement the Climate Action and Adaptation Plan (CAAP) has not been identified. The City is in the process of finalizing its facilities condition assessments – and those results are likely to indicate that the City has major needs in this area and that some facilities are in critical need of funding – which is not currently available. As mentioned, President Biden has proposed legislation for major funding for infrastructure and it is possible that help will come from the Federal Government if Congress passes an infrastructure funding bill. As safe and efficient movement of goods and people on City roadways must be a priority, staff recommend that funding for streets and roads be considered in the overall context of other infrastructure and one-time needs.

Conclusion and Recommendation

A street and alley improvement bond issue will provide immediate improvement of street and alley conditions, but it may or may not provide long-term improvement of overall street conditions. Whether a bond issue provides improvement or is counterproductive will depend on whether the source of debt service funding reduces long-term funding typically available for annual street and alley maintenance. The level of long-term improvement in the City's overall

street condition will depend on how closely the PMP is followed in terms of efficiency and effectiveness.

If the City Council wishes to consider a bond issue, particularly one using current funding for road maintenance, a major study is recommended to identify which roads to repair with bond funding and how to align these repairs with lowered future road maintenance funds that would be reallocated for debt service. This study is likely to be complex and costly, with a heavy use of City resources, even though a consultant would perform the bulk of the tasks.

For these reasons, staff recommends deferring additional work on a street bond at this time and instead proceed with the update to the PMP with specific direction to develop options as to how to best balance the goals of maintaining as high an overall pavement condition as possible with the additional goal of addressing streets in poor condition. Staff also recommend waiting for additional details about possible federal infrastructure funding legislation.

If the City Council wishes to proceed with further development of bonding for street maintenance/improvements, it is recommended that the following key questions be addressed by the City Council to provide key direction to staff. Some of the possible actions may result in significant costs and/or significant diversion of staff from other City Council priorities.

- As recommended by staff, should the update to the Pavement Management Plan include several options that provide different balances between maintaining overall City street condition (PMI) and minimizing future costs and the need to address the City's worst streets and alleys?
- Should new voter-approved funding for a street and alley improvement bond issue be explored, e.g., a parcel tax or special assessment?
- Does City Council authorize a study to determine the impact on overall street condition (the PCI) over time to analyze the tradeoffs between funding upfront street repairs through a bond issue and reducing future annual street maintenance to pay for the debt service on the bonds and the development of several options with regard to terms of bond issue size and the relative level of funding for the worst streets?
- Should staff develop general options and identify associated impacts to use some of the unplanned Measure A funds and dedicate them to debt service on a bond issue instead of for annual road maintenance and/or for other infrastructure and one-time needs?
- If additional bond funding or other external funding is obtained, does the City Council desire to hire the additional internal staff that will be required to deliver the improvements, hire consultant to assist current staff, or a combination of both? This question is important to successfully deliver projects and ensure current staff are not overextended and to avoid inadequate staffing issues.
- Should staff develop a high-level review for the City Council on the overall street and road, sidewalk, facility, and other infrastructure and other one-time needs? This review would be presented sometime after the COVID pandemic when resources become available.

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- If the City Council wishes further study on street bonds, does City Council agree that this is a higher priority than either normal work to repair and maintain streets or other engineering and financing issues? Should these tasks be accomplished on a time available basis only? This question is relevant because staff are currently overextended due to COVID-19 impacts. There are backlogs on other City Council priorities, in addition to a heavy normal workload. Examples of other priority projects include engineering on currently funded projects like the Artesia Boulevard Project, Shoemaker Bridge, Shoreline Drive Street Improvements, and other grant funded projects. Other projects, as examples, that could be impacted include engineering and financing of Fire Station #9 and financing for Airport construction needs.

If you have any questions, please contact either Eric Lopez at (562) 570-5690 or John Gross at (562) 570-6427.

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