

To: Mayor Adena Ishii
Berkeley Councilmembers
Paul Buddenhagen, City Manager
David White, Deputy City Manager
Wahid Amiri, Interim Public Works Director

From: Ray Yep, Margo Schueler, Larry Henry

Subject: Comments regarding an infrastructure bond in 2026,
Recommendations regarding Measure FF implementation

Date: March 20, 2026

Addressing Berkeley's approximate \$1.9 billion of unfunded infrastructure needs is a complex issue. Berkeley is at a critical point as it ramps up to implement Measure FF and is considering a \$300 million bond measure in November 2026. We have distilled the issues down to two proposals that we think will be "game changers". These proposals are inter-connected and are described below.

1. Defer infrastructure bond from 2026 to 2028

Objective: Place an infrastructure bond on the ballot when the Vision 2050 recommendations are implemented, including integrated planning, prioritization of the needs, use of new technologies, life cycle maintenance management, and project delivery. This will allow the public to understand the "big picture" and the steps needed to get Berkeley to a state of reliable sustainable infrastructure.

Mayor Arreguin launched an innovative imitative named Vision 2050 in 2017. A citizen task force was formed and a final report was presented to Council in early 2020. Mayor Ishii formed a new task force and an updated Vision 2050 report was presented to Council in late 2025. These works represent some of the most thoughtful input by experienced citizens in Berkeley. City Council is considering placing a \$300 million G.O. bond for infrastructure on the November 2026 ballot. While it is fine to test the public's support for a bond, we believe that there are many factors that make 2026 too soon. We propose that the bond be deferred to 2028 for the following reasons.

A. The Vision 2050 recommendations have not been implemented:

Many of the Vision 2050 recommendations were started in 2022. When Vision 2050 was updated in 2025, none of the recommendations have been factored into planning for the new infrastructure bond. The includes:

- The preparation of a Program Plan that tells the "big picture" and uses Envision criteria to prioritize the needs.
- The adoption of an Asset Management Plan to properly maintain our facilities over their life cycle.
- The collaboration with U.C. Berkeley and other research centers to bring in new technologies and approaches.
- The evaluation of the organizational requirements to deliver the many projects.

B. The public is not fully informed:

The public is being given a fragmented view of our infrastructure needs at the commission and community meetings. Staff is telling the public the projects proposed for the for \$300 million. The unfunded infrastructure need in Berkeley is about \$1.9 billion. The public is not being informed of how the City will address the other unfunded needs and will be able to provide fully functioning infrastructure services. Preparing a Program Plan will help with this issue.

C. No public works director:

With Terrance Davis leaving Berkeley, the City will be without a Public Works Director at a critical time. This includes dealing with staff shortages, addressing a budget deficit, and trying to launch Measure FF. Adding the work of selling a bond measure to the public and implementing it, if approved, seems like a goal that is not possible to achieve. The Public Works Department has also lost many staff to retirements and there is a loss of institutional knowledge.

D. \$30 million shortfall in the City's budget:

All City departments are required to spend significant time to address the approximate \$30 million budget shortfall projected for the City. This is happening at the same time as Council is considering an infrastructure bond.

E. Measure FF has not yet been implemented:

Measure FF was passed in November 2024. Since that time, the oversight committee has been established, the hiring of project staff has started and procuring consultant services has started. No projects are underway yet.

F. Potential changes to Measure FF will require staff time:

LaTanya Bellows submitted a report titled "Analysis and Response to Questions regarding Two Pavement/Sidewalk Related Voter Initiatives on the November 5, 2024 Ballot", dated July 30, 2024. The report said that the current citywide PCI is 57 and it will increase to PCI 60 after 12 years. The stated target in the ballot measure is PCI 70 or better. We have some ideas on how to "change the narrative" on this and that is described in proposal #2 (see below). It will take significant staff time to work through the alternative approach.

G. Need to verify cost estimates

Cost estimates for street paving and sidewalk improvements have been changing. We understand that construction costs are increasing and that the world conflicts may drive the costs higher. It is important to update and verify all of the cost estimates for infrastructure funding.

H. Competing revenue measures in 2026:

There is the risk of tax fatigue by the voters. Being contemplated for the November 2026 ballot are: a) regional transit sales tax increase, b) sales tax increase in Berkeley, c) parcel tax to support the arts in Berkeley, d) G.O. bond for infrastructure in Berkeley, e) others.

I. Turmoil in the Federal administration:

There is tremendous uncertainty in the Federal administration about environmental regulations, social issues, funding of programs, etc.

J. A campaign team has not yet been identified:

Council has not yet decided to place an infrastructure bond on the November ballot. We are not aware if a campaign team has been organized if Council decides to proceed. If we wait until Council makes the final decision, the time for campaigning will be very short.

2. Change the approach to Measure FF to achieve success

Objective: Incorporate alternative technologies and life cycle cost analysis to achieve benefits beyond Pavement Condition Index (PCI) with Measure FF.

Berkeley has relied on asphalt technology for street paving. This requires surface sealing, overlay treatment or complete rebuilding on a periodic basis. One departure from this is the permeable pavement demonstration project on Allston Way in downtown Berkeley.

Berkeley's consultant has stated that baseline funding and Measure FF funding will achieve a PCI of about 60 at the end of the program. This is far short of the stated goal of PCI 70 or better. The current economy suggests that oil prices will increase with global conflicts that are underway. This will drive up the cost of asphalt and will lower even more the PCI outcome. We should stop treating asphalt as the default technology. To achieve "good" streets for the next 14 years and beyond, we propose the following concepts:

Proposed new approach: Deploy a blended paving strategy

We should not apply a one-size-fits-all approach. Permeable paving should be deployed where site conditions support it. We propose using permeable pavement for arterial and collector streets in the 'Midlands' where the capital investment yields the highest sustainability and utility given its hydrological characteristics. Conversely, we should use asphalt paving for arterial, collectors and residential streets in areas west of San Pablo and in the Hill areas to the east. This blended approach optimizes the budget to achieve "good" streets across the network while hardening our most critical infrastructure in the Midlands that can act as a stormwater sink for the other two areas. This positions the Midlands as a practical location for off-site Green Infrastructure treatment, where allowed under the MS4 permit framework (i.e., alternative compliance), subject to Regional Water Board acceptance.

The Midlands and the concept that there are three geographical parts of Berkeley for infrastructure improvements was in the Vision 2050 report. A description is in Appendix B.

How to get there: Build on the Vision 2050 recommendations

- Use Life Cycle Cost Analysis

Larry Henry has studied the use of Life Cycle Cost Analysis (LCCA) on various paving options. To illustrate the LCCA methodology, he created a detailed cost analysis for asphalt, concrete, and Permeable Interlocking Concrete Pavement (PICP). The analysis included initial costs, annual maintenance costs, and end-of-life costs, discounted over 30, 50, and 100-year time horizons.

Key Findings:

- 30-Year Horizon: Concrete and PICP have similar net present values (NPVs), both lower than asphalt.
- 50-Year Horizon: PICP has the lowest NPV, followed by concrete, with asphalt being the highest.

- 100-Year Horizon: PICP remains the most cost-effective option, with concrete being the second-best choice.

PICP is the most cost-effective material over long-term horizons due to its lower maintenance costs and better durability. Concrete is also a viable option, especially for shorter time horizons. Asphalt, while cheaper initially, incurs higher maintenance costs over time, making it less cost-effective in the long run. This plan provides a comprehensive approach to selecting pavement materials that support Berkeley's Vision 2050 goals and sustainability principles, ensuring a resilient and cost-effective infrastructure for the future.

- Leverage for Regulatory Compliance
Have Wood Rodger's, Inc evaluate the use of permeable pavement for meeting the City's stormwater permit requirements regarding green infrastructure. If the Regional Water Quality Control Board accepts this application, it transforms a road expenditure into a compliance asset. This creates a positive financial feedback loop. This is especially timely given the State Water Board's move toward standardized MS4 cost reporting beginning July 1, 2026, with reporting of MS4 implementation expenditures incurred during State Fiscal Year 2026–27.
- Enact a "Dig Once" Policy
Permeable pavement is a semi-permanent installation. It requires strict coordination. We must develop a Dig Once policy to ensure underground utilities are upgraded prior to paving. This avoids the waste of digging up new streets and reflects a higher level of state capacity and planning.
- Ensure Accessibility
We must consider the impacts to bicyclists and wheelchair users. The transition to larger concrete pavers will minimize the vibration associated with smaller bricks. This ensures a surface that is compliant with ADA standards and comfortable for all users.

Achieving success: Provide multiple benefits

Finally, we highlight that this strategy meets the specific components of Measure FF that target sustainability. By providing tangible environmental benefits to Berkeley, we honor the voters' intent to not just pave streets, but to transform them. The benefits include:

- Increase durability of the street surface and reduced maintenance
- Improved stormwater quality flowing to our creeks
- Attenuation of stormwater flows
- Recharging of our groundwater basin
- Traffic calming

We, the undersigned, have worked in private industry and with public utilities and have contributed over 15 years each to Berkeley's infrastructure planning. We have served on the Public Works Commission and have been on the Vision 2050 task forces. We are available to meet to explain our recommendations.

Ray Yep, Margo Schueler, Larry Henry

Appendix A Importance of Verifying Cost Estimates

ESTIMATE OF THE TOTAL FUNDING NEEDS FOR STREET PAVING

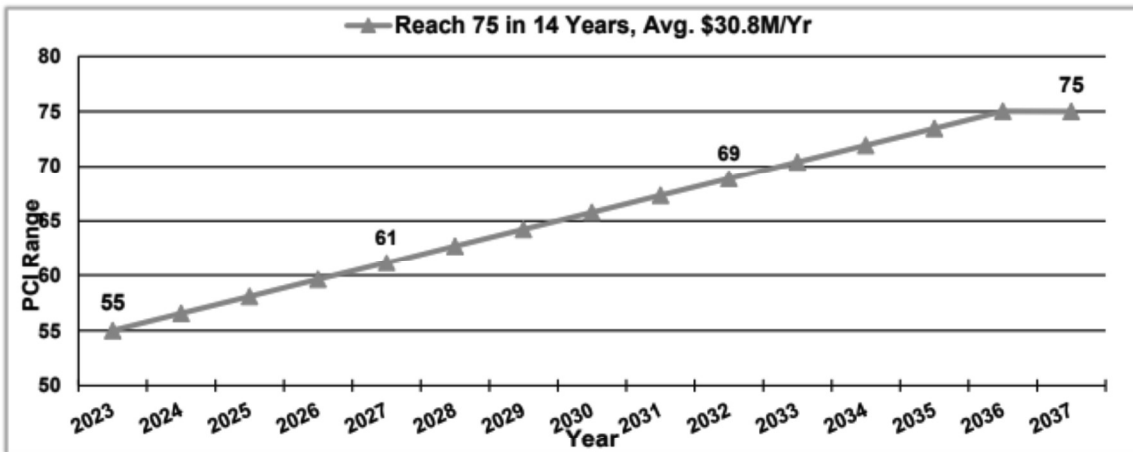
Berkeley has a current overall PCI of about 57. The objective is to raise the overall PCI to 70 or higher in about 12 years. There have been many estimates prepared in the past of the cost to accomplish this. The following is a summary of two recent reports and their estimates.

Berkeley uses the Streetsaver program to manage the condition of our streets, the priority to perform maintenance and construction work and the estimated costs. Streetsaver costs include contingency, engineering, construction management, normal utility coordination, curb repairs and ADA ramp repairs. It does not include costs for sidewalk repairs, stormwater treatment to meet Municipal Regional Permit (MRP) requirements and unusual utility coordination.

2022 Pavement Management Program Report, Pavement Engineering, Inc., March 2023

Pavement Engineering, Inc. (PEI) is the City's consultant to assist with the planning and design of street paving. Their most recent cost estimates are contained in the [2022 Pavement Management Program Report](#). PEI prepared several budget scenarios and the scenario to achieve a PCI of 75 in 14 years is the most appropriate to analyze. The following graph illustrates the scenario.

Figure 1
Target PCI of 75 in 14 Years



Appendix B of the PMP report had an excellent breakdown of the program cost by year, street classification, rehabilitation, maintenance and PCI. The cost projection builds in cost escalation and on-going pavement deterioration. The following is a year-by-year breakdown.

Table 1
Breakdown of Rehab and Maintenance Costs

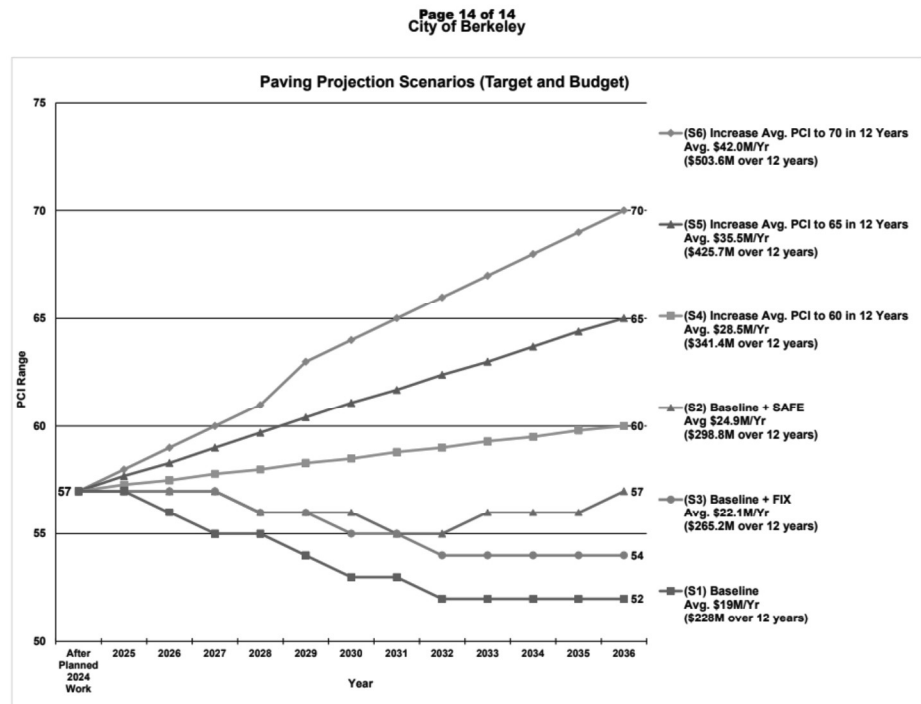
Year	Rehab Cost, \$ in thousands	Maintenance Cost, \$ in thousands	Total Cost, \$ in thousands	PCI
2024	14,450	7,269	21,719	56.5
2025	30,454	648	31,102	58.1
2026	37,574	132	37,706	59.6
2027	34,187	1,647	35,834	61.2
2028	33,764	596	34,360	62.7
2029	32,946	1,320	34,266	64.2
2030	31,992	350	32,342	65.7
2031	28,229	4,605	32,834	67.3
2032	19,427	8,041	27,468	68.9
2033	26,806	2,734	29,540	70.4
	289,829	27,342	317,171	

The budget scenario is to achieve a PCI of 75 in 14 years. The estimated rehab cost needed is about \$29 million per year.

Staff Report on Two Voter Initiatives, July 2024

LaTanya Bellows submitted a report “Analysis and Response to Questions regarding Two Pavement/Sidewalk Related Voter Initiatives on the November 5, 2024 Ballot” to Council, dated July 30, 2024.

The following graph in the report shows that baseline funding plus Measure FF funding will achieve an overall PCI of 60 in 12 years. The average funding will be about \$25 million per year.



07/18/2024



IMPORTANCE OF VERIFYING COST ESTIMATES

The above data shows inconsistencies in the data and the importance of verifying cost estimates. Estimates by the same consultant have projected the following:

- PCI 75 in 14 years, average \$31 million per year funding
- PCI 70 in 10 years, average \$29 million per year funding
- PCI 60 in 12 years, average \$25 million per year funding

We understand that construction costs are very high and are increasing. It is important that all proposed capital projects have cost estimates that updated and verified. It should include the date of the estimate, include inflation during the program period, include contingency, include market volatility, include overhead and administration, and other factors.

Appendix B

Vision 2050 Describing Three Planning Zones in Berkeley

There is not one answer for Berkeley

Our city grew in the 19th century along the shipping corridors on the bay with the pier and the railroads moving goods and people north and south from the farms and factories. With the establishment of the University, the center of town shifted east from old Oceanview and Berkeley spread developing our 20th century grid of water, sewer, and gas underground and telephone and power overhead along the streets from the bay to the hills.

Our infrastructure corridors connect us, providing transportation, water, waste, power and communication networks. But from an infrastructure and climate point of view, Berkeley has three different “zones” with different challenges.

The hills have the highest risk of fires, seismic shaking and landslides. Steep slopes and narrow, winding roads make evacuation difficult. Adaptation will require careful management of vegetation, and finding opportunities to shelter in place when evacuation is impractical. Water pressure needs to be high for fire-fighting, and electric utilities should be placed underground.

Flooding risks are most important in the flatlands, as climate change and development increase runoff from higher elevations. Rising sea levels and groundwater will keep water from seeping into the soil and flowing into the Bay. The flats also have worse air quality, thanks to heavy traffic on Interstate 880, University, Ashby and San Pablo Avenues. Buried infrastructure will need to be waterproof, and the risks of extreme shaking may increase as groundwater rises. These residential neighborhoods have the least tree canopy and highest traffic impacts when compared to other areas of Berkeley



Figure 1 – Three Zones in Berkeley

Downtown Berkeley is particularly vulnerable to heat. South Berkeley also has high traffic flows and needs safer streets and sidewalks for bikes and pedestrians. These neighborhoods need greener infrastructure (trees and rain gardens) to help manage both storm water and air quality. Since they sit at the base of the hills, storm water and groundwater can emerge as springs and flood basements. Infrastructure and sidewalks need to be enlarged and re-designed to handle growth and development, to support street-tree canopies, and to make sidewalks into more people-friendly public space.

These different parts of Berkeley have different needs. Infrastructure planning and implementation needs to recognize historic and present inequalities, and avoid using “equality” (i.e., giving everyone the same thing) as a substitute for “equity” (which is making sure people have access to what they need).