



Berkeley Public Works
Commission

**Regular Meeting
PUBLIC WORKS COMMISSION
Agenda**

**Thursday, November 2, 2017 at 7:00 p.m.
Corporation Yard, 1326 Allston Way, Berkeley, CA
Willow Room**

7:00 pm CALL TO ORDER: Chair will call the meeting to order; Secretary will call roll.

7:05 pm PUBLIC COMMENT: Each speaker is limited to three (3) minutes.

7:15 pm APPROVAL OF MINUTES: September 7, 2017**, October 5, 2017**

7:20 pm CHAIR REPORT:

7:25 pm STAFF REPORT:

8:00 pm ACTION ITEMS: (Matters for discussion and possible action)

1. 2018-2022 Paving Plan Recommendation – Revised final memo*
2. 2017 Undergrounding Report Status
3. December Retreat 2018 Work Plan Agenda
 - a. Council subcommittee and work plan requirements*

9:00 pm INFORMATION ITEMS: (Action may be taken on any information item at this meeting if a majority of Commissioners votes to move it to an action item. This vote may take place at or before the time the item is scheduled to come up).

1. Standing Information Item: Subcommittee Reports

- a. Utility undergrounding
- b. Paving
- c. Watershed
- d. Mission statement
- e. Sidewalks

2. ANNOUNCEMENTS:

- a. Bay Currents GI Talk Tues., Nov. 14: Greening the Gray: This year's hurricanes have vividly shown the dangers of cities' vast sheets of impermeable roofs, streets, and parking lots. But here in the Bay Area, paved-over cities are being slowly converted to green spongy habitats. How do rain gardens, trees, and soils benefit water, wildlife, and people? Hear about the history and potential from Peter Schultze-Allen, who brought "low impact development" to Emeryville's legacy of heavy industry and pollution. Refreshments 7 PM, talks 7:30 - 9 PM at St. Alban's Parish Hall, 1501 Washington Ave. (one block north of Solano), Albany. Free, but seating is limited.
- b. APWA regional conference in Richmond
- c. Other

9:30 pm FUTURE AGENDAS:

MRP GI Plan, Undergrounding Report, Measure M Status Update, Election of 2018 Officers, Mission

10:00 pm ADJOURNMENT

- * Indicates written material included in packet.
- ** Indicates material to be delivered at meeting.

A complete agenda packet is available for public review at the Engineering Division front desk.

ADA Disclaimer:

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SB 343 Disclaimer:

Any writings or documents provided to a majority of the Commission regarding any item on this agenda will be made available for public inspection at the Public Works Department located at the address below.

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Commission Secretary:

Nisha Patel, Public Works - Manager of Engineering/ City Engineer
Public Works Department/Engineering Division, 1947 Center Street, 4th Floor,
Berkeley, CA, 94704, Telephone (510) 981-6406, Fax: (510) 981-7060
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A. WORK PROGRAM

1) Development of a Work Program

Many commissions find it effective to establish a yearly work program or statement of goals. A work program is a planning document that specifies how and when the objectives (outcomes) which the commission expects to accomplish during the fiscal year will be achieved. Goal statements explain the nature and scope of the work to be performed and the time needed to accomplish the goal. The nature of the duties of specific commissions may determine which method is most suitable. Designing yearly work programs or goal statements may be done in conjunction with the development of the relevant departmental work plan so that the department and commission's work will complement each other throughout the year.

When developing a work plan Commissions should take special care to ensure that they remain within their subject area purview and the constraints of their enabling legislation.

Mission:

Advises the Council on maintenance, repair, and capital improvement of streets, sidewalks, sanitary sewers, storm drains, City buildings, communication systems, vehicles and equipment, and undergrounding of utilities.



Public Works Commission

ACTION CALENDAR

To: Honorable Mayor and Members of the City Council
From: Public Works Commission (PWC)
Submitted by: Margo Schueler, Chair, Public Works Commission
Subject: PWC Recommendation for the Five-Year Paving Plan

RECOMMENDATION

Adopt a resolution that recommends approval of the first year (2018) of the Five-Year Paving Plan (2018-2019) as proposed by staff.

SUMMARY

Improved street quality numbers among the very few non-divisive issues of our time; everyone agrees that better streets make for a better community.

The PWC does not believe that this plan delivers better streets. The outcomes predicted by staff will be lower PCI by 2022, increased costs per mile of asphalt street treatment, no change in the grey vs. green nature of our travelled right of way and storm water management system, and no further understanding of innovative technologies or life cycle costs of paving methods. Without the expenditures from Measures M and T1, the PCI would have fallen even lower than projected with this plan.

Over the last year the PWC has worked with Public Works Staff to understand and review the proposed 2018-2022 Five-Year Paving Plan (Paving Plan) and the Measure T1 Implementation Plan. We have discussed Berkeley's many Plans that impact our goals for our streets, sidewalks, bus and bikeways. There has been a near complete transition of staff working on the Paving Plan over the last year. We have met with new staff to discuss Berkeley's concerns and desires and share concerns about resource limitations impacting our ability as a city to innovate in our right of ways. The PWC commends the new staff on their commitment to communication with the PWC and looks forward to future Plan improvements that emphasize durability and sustainable innovations that better optimize our limited Street Paving and Rehabilitation budget.

Staff has emphasized acceleration of current paving practices in the Paving Plan focusing on residential streets to address immediate improvement in the citywide Pavement Condition Index (PCI) while the PWC is increasingly concerned that all

elements of the Paving Policy need to be addressed in the Paving Plan development. In completing our review of the proposed 5-Year Plan, we do not find that the Plan will achieve any improvement in the PCI over time. PCI using this historic approach will continue to decline based on the City's consultant's projections. In addition, the PWC does not find the proposed Plan consistent the additional elements beyond the PCI prioritized in the 2009 Council approved Street Paving and Rehabilitation Policy.

Moving forward with the 2018 proposed projects will allow the City to proceed with urgently needed projects previously reviewed and recommended, while allowing projects not yet under design to address multiple elements of the Street Rehabilitation Program including:

- Update project designs to accommodate the effects of climate change, especially those stemming from the extremes in precipitation from drought to heavy rains, which have taken a toll on our existing streets and infrastructure;
- Optimize green infrastructure to provide multiple benefits by (e.g., street treatments which calm traffic, reduce pavement noise, recharge ground water, help reduce flooding and increase aesthetic value); and
- Evaluate full life-cycle costs of street treatments, especially when reconstructing streets.

The City of Berkeley needs to identify and take full advantage of lessons learned from prior test sites such as Allston Way Paver demonstration and Measure M Green Infrastructure (GI) installations through monitoring and evaluation of data to enhance future alternative design.

FISCAL IMPACTS OF RECOMMENDATION

Unknown.

CURRENT SITUATION AND ITS EFFECTS

In the 2015 Paving Plan Recommendation from PWC to the City Council it was stated that "When we step back and look at the whole City landscape, the infusion of Measure M funds has significantly improved the condition of our streets (as measured by an increase in streets paved and in the overall Pavement Condition Index (PCI)." This statement was based on the staff report to City Council on November 15, 2015, Draft Mid-Program Review Report for Measure M Integrated Streets Investment Plan and Update of the 5-Year Street Paving Plan, FY 2016 to FY 2020 (Report). The Report stated: "The City's goal is a PCI of 75. After the Measure M investments and other funding utilized during the 2014-2018 five-year plan, Berkeley streets are expected have a PCI rating of 65. When Measure M funding ends in 2018, it is estimated that the PCI will remain slightly stable or decline." Staff projected that, with the additions of nonrecurring Measure M bond funding added to current expenditures, an average PCI of 65 would be attained by the end 2020.

A second report, the May 2, 2017, Measure M Information Report – Update 2017 by the Public Works Director, focused on expenditures, projected expenses and plans, and affirmed that 2018 will be the final year of expenditures of the \$30 M Measure M funds.

PCI attainment was not addressed, nor was the PWC given a preview of the report as part of their oversight responsibilities.

The questions outstanding are:

1. What is the current city-wide average PCI?
2. Can we maintain the current PCI?
3. What will it take to attain and maintain an aspirational goal of a city-wide average PCI of 70?

ARE WE ACHIEVING AND MAINTAINING GOOD STREETS?

To better understand the long-term projections of city-wide PCI, the PWC asked what it would cost to attain and maintain a good PCI. City staff worked with Nichols Consulting Engineering (NCE) to conduct an analysis of city-wide PCI. An initial analysis (Table 1) looked at the city-wide PCI expected at the close of the 5-year budget to provide a baseline by Council District. They also looked at the PCI by category of attainment (Charts 1 & 2). Lastly, they looked at several different funding scenarios that would be required to achieve city-wide PCI outcomes over the next 30-year period. We evaluated the following funding scenarios to maintain the current PCI average (Chart 3) and attain and maintain a PCI goal of 70 (Chart 4). Currently the city-wide PCI average is 57, far from the initial Measure M projection of 65, and further from the City’s PCI goal of 75.

Table 1 PCI by Council District – Current 5-Year Plan									
	Council District								
Year	1	2	3	4	5	6	7	8	Overall PCI
2017	58	50	57	53	62	58	60	62	57
2018	57	50	56	51	61	56	58	63	57
2019	56	51	56	48	59	55	56	61	55
2020	55	51	55	46	59	54	54	60	55
2021	54	49	53	45	59	52	56	59	54
2022	52	48	52	46	57	51	54	58	52

The following charts show the trend of current PW paving plan. Chart 1 shows that under the current PW street improvement plan, roads considered Very Good/Good and Very Poor/Failed PCI are steadily increasing, reflecting the conscious strategy of focusing paving activities on Poor and Fair streets before they fall into the Fail category.

Chart 1

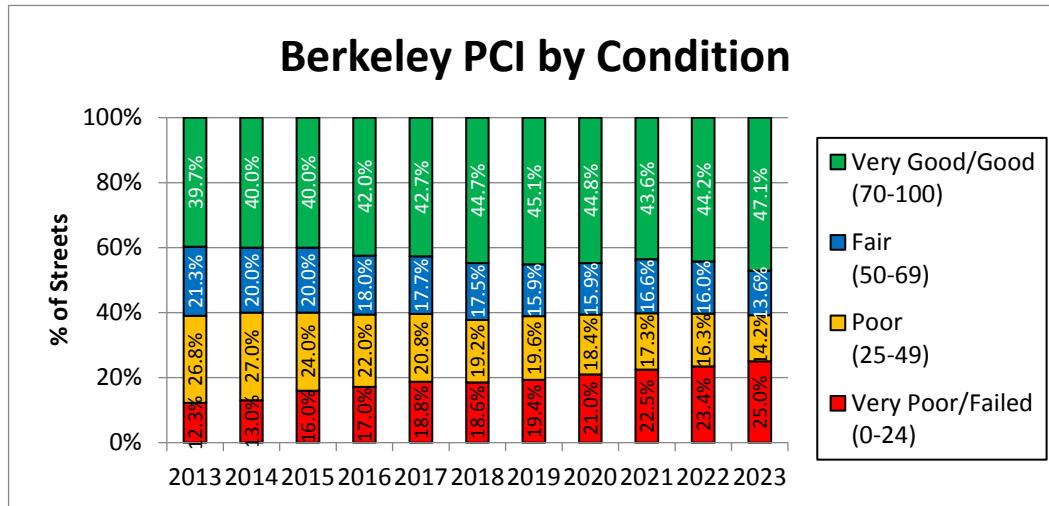
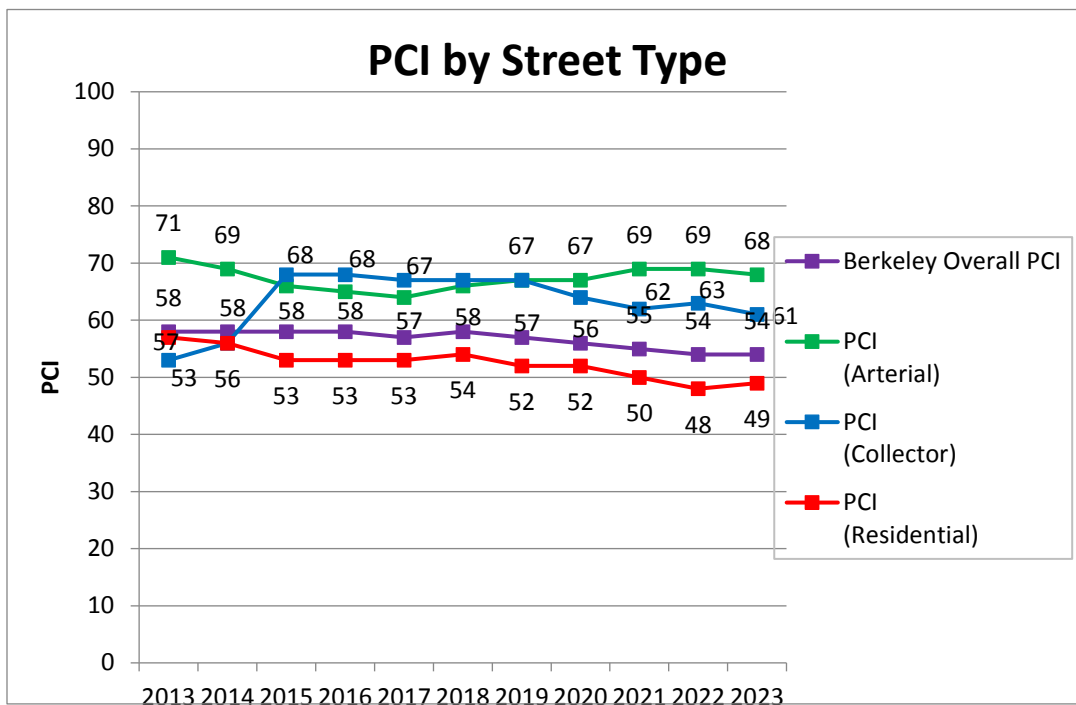


Chart 2 shows 2017 citywide PCI at 57 with collector streets seeing the largest increase, with all the recent paving activity driven primarily by the infusion of funds from Measure M. The declines after 2018 reflect the anticipated backslide in PCI addressed in the 2015 Mid-Program Review Report. Recall, this mid-program review projected a citywide average PCI of 65; however, the NCE projections indicate by 2022 our PCI will be 54, a decline from our current 57.

Chart 2



30 YEAR SCENARIO AND COST ANALYSIS

NCE provided 30 year costs for two alternative scenarios shown in the following Charts 3 through 6:

1. Maintain the current average PCI of 57 (Charts 3 and 4); and
2. Attain and maintain streets for the next 30-years with a "useful life" PCI goal of 70 (Charts 5 and 6).

The analysis conducted did not include any funding from Measure T-1. This analysis also looked to find the least cost approach to meet the citywide targets listed. Since asphalt pavement has a "useful life" of 20 years, if the analysis below was extended to 40 years and not just 30 years, the capital and maintenance capital costs increases could be even greater than displayed, as those streets would potentially be reconstructed twice, not just once, during that 40 years to attain and maintain the same PCI.

Chart 3

Maintain Current PCI (57), \$322 Million

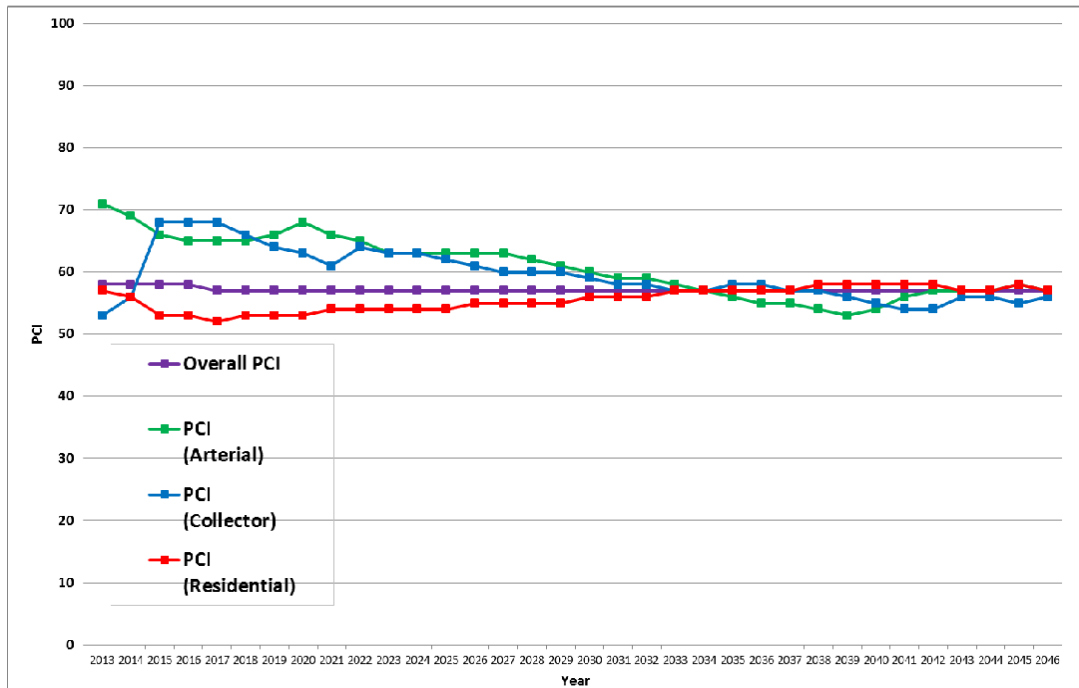


Chart 4

Maintain Current PCI (57)

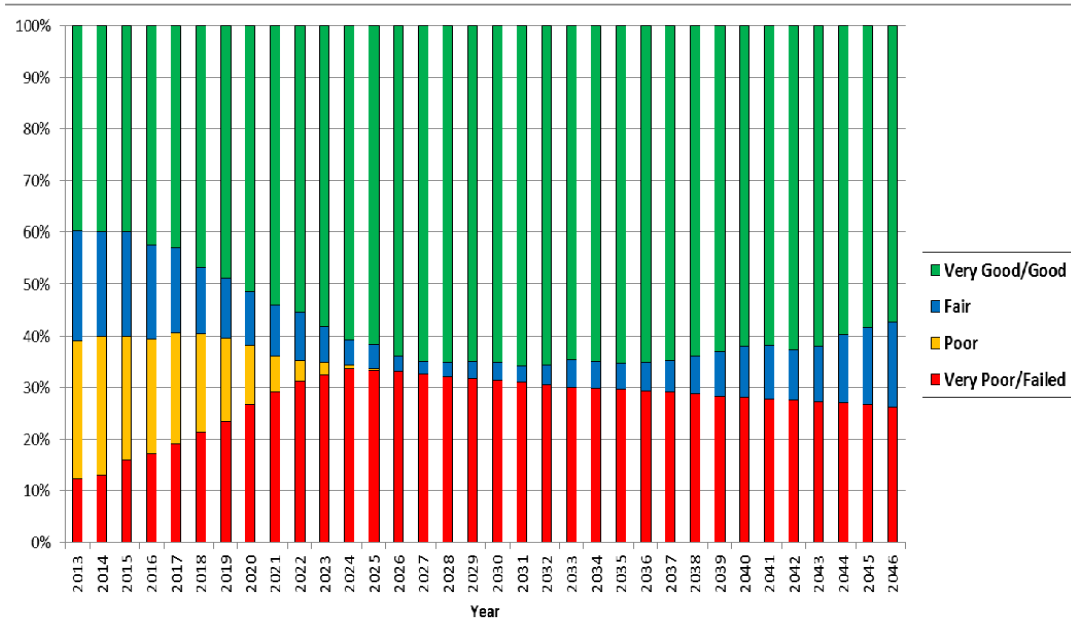


Chart 5

Increase PCI to 70, \$416.3 Million

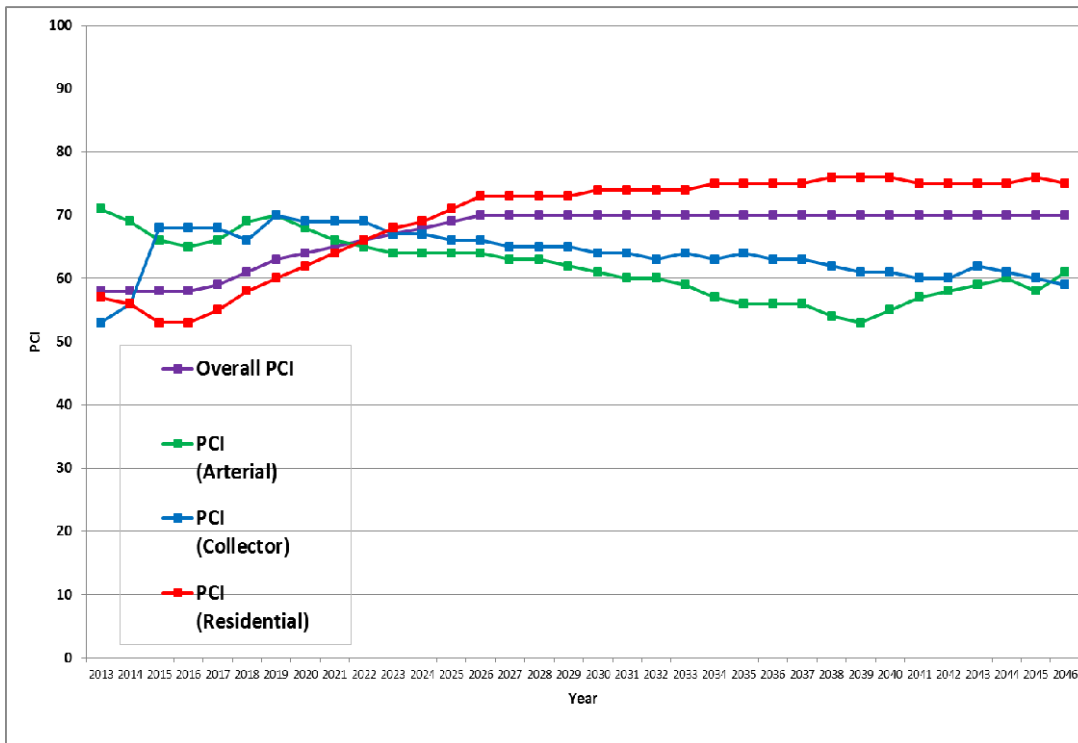
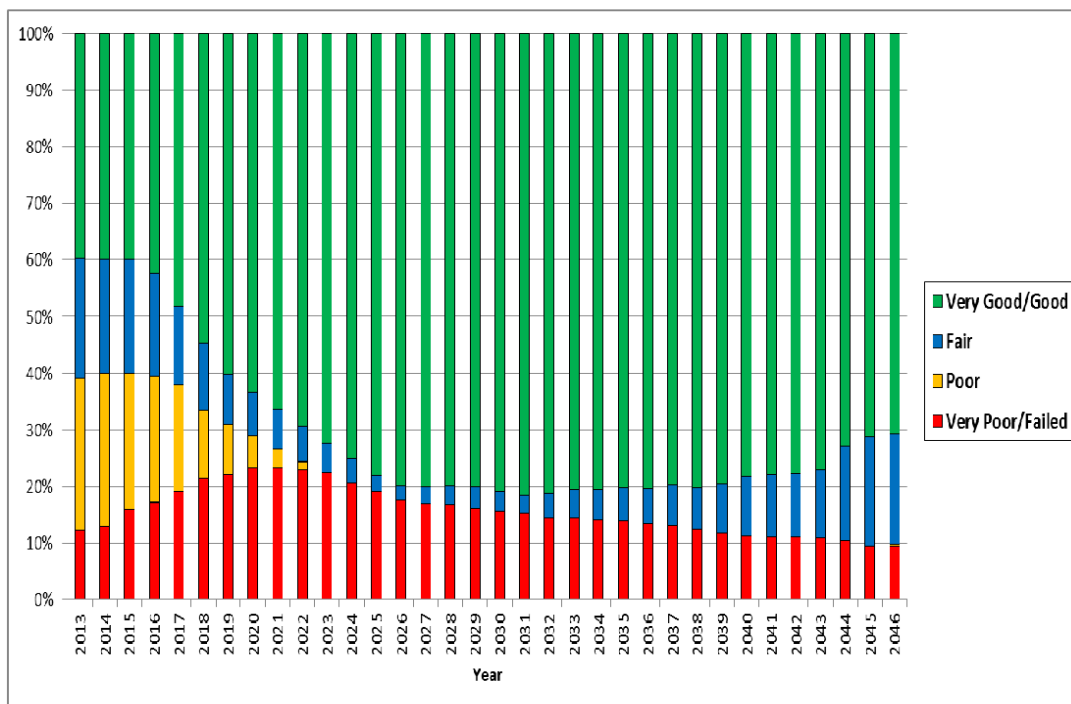


Chart 6

Increase PCI to 70



The 30-year analysis demonstrates that to maintain the current city-wide PCI using the current paving strategy, the city will need continue to expand the number of Very Good/Good streets while letting number of Very Poor roads expand. Achieving this goal will require \$322 million over the next 30 years, or an average of \$11-12 million annually (Table 2). Berkeley currently spends ~\$7 million annually on street improvements, which means to maintain the current PCI, the city will need an additional \$3-4 million annually. The funding needs almost double to achieve and maintain a PCI of 70 (Table 2). To put these costs into context, the City of Berkeley has already doubled the street paving budget since 2012 from \$2.7 million per year to the current \$6-7 million per year.

Table 2

Current Asphalt Paving Technology	Current annual spending on street improvements	Estimated spending needed to maintain the current PCI of 57 for 30 years*	Estimated spending needed to attain & maintain PCI of 70 for 30 years*
Current annual capital budget	~\$7M	\$11-12M	\$14-15M
Shortfall from annual budget	NA	(\$3-4M)	(\$6-7 M)

Source: NCE 4-25-2017 using StreetSaver

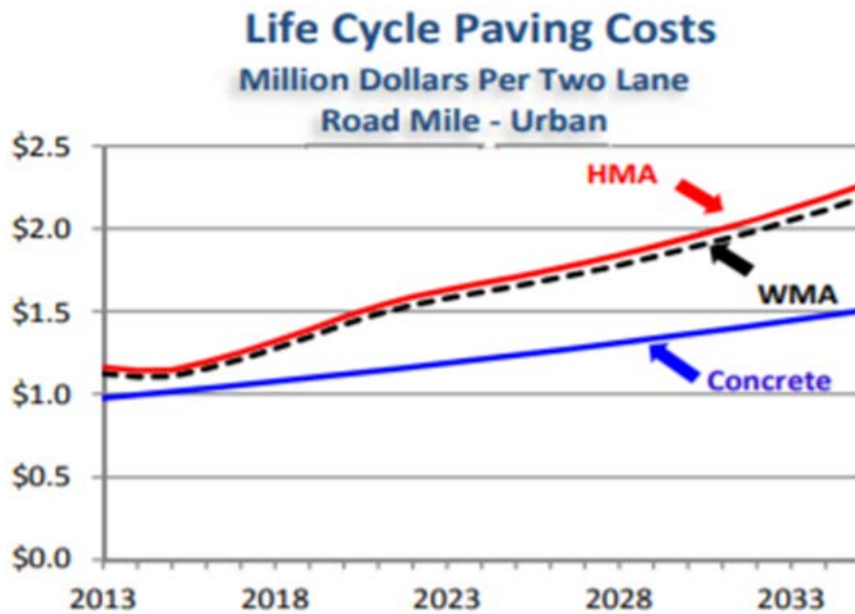
If Berkeley’s goal is to have smooth asphalt streets, an additional \$7 million annually for 30-years must be identified if our aspirational PCI goal of 70 is to be reached, or we can use nearly all the \$100 million Measure T1 40-year bond money, to maintain the current PCI of 57. We need better alternatives and longer planning horizons.

ACHIEVING LONG TERM COST EFFECTIVENESS

The PWC recommends that staff explore opportunities to include alternatives to asphalt when conducting a full road reconstruct, but continue to use asphalt to maintain the integrity of our current capital investment in streets that do not need full reconstruction. Case studies around the country have demonstrated that there are alternative paving materials (other than asphalt) that last 2-3 times longer, but do come with a higher initial capital cost.

Public Works staff recently presented to the PWC paving subcommittee an analysis that demonstrates that concrete streets are essentially at a breakeven cost with asphalt streets after 30 years when reconstructing a street. We know that streets like Marin Avenue east of Oxford Street are over 50 years old. Assuming this local demonstration of durability would hold true for future projects, the city could recognize long term cost savings by reducing the need to repave roads by replacing asphalt streets with alternatives such as concrete where feasible. Other street treatments like the Allston Way permeable pavers, are anticipated to have a useful life is 50-80+ years and have multiple other benefits, should also be considered where appropriate. This recommendation is in accordance with the City Paving and Rehabilitation Policy for long-term cost effectiveness. Across the nation, transportation departments are looking

to identify materials that will address durability, with the costs of asphalt streets v. concrete being higher when viewed thru a life cycle cost lens rather than initial construction costs alone.



A LONG TERM PLAN TO ACHIEVE A PCI OF 70

The PWC believes that the current 5-year planning cycle for street repair is a key driver for the projected PCI backslide. Limited funds are being directed towards maintaining the highest city-wide PCI over the planning term. This method favors the prioritization of low initial capital cost, single benefit paving treatments that require a high level of ongoing maintenance.

A long-term plan that approaches the 2050 vision and plan recently proposed to Council by former Councilperson Gordon Wozniak for our City's infrastructure is needed for our streets. Planning for long-term cost effectiveness, long-term street pavement durability and aesthetics, are key criteria in the 'Street Rehabilitation and Repair Policy' adopted in 2009 policy. The long-term cost effective inputs are current capital and ongoing capital plus maintenance funds - not just the current capital needed to attain a PCI goal but also ongoing capital plus maintenance costs to maintain that street going forward with the same PCI.

Long-term cost effectiveness, as in a 40-year inter-generational bond, is an opportunity to effectively and efficiently manage capital investments, so that the useful life of that street investment is inter-generational. The PWC recommends that the Public Works Department prepare a plan that will:

1. Outline a 40-year capital street paving and maintenance plan;
2. Evaluate the true life-cycle costs associated with the different paving technologies;

- Street Saver, the City's street paving optimization model, currently allows for planning using the cost of a rebuild or repair.
 - The PWC recommends normalizing those costs by the expected life of the road repair or rebuild useful life. By doing so, the model will select road treatments that offer the best life cycle value for the city¹.
3. Include long-term costs and benefits that are not easily quantified, especially those associated with future regional green infrastructure mandates, and with the aesthetic values of alternative paving technologies;
 - After applying analytical tools to determine the most cost effective approach, an additional cost benefit premium of 25% could be applied to alternative designs and materials which provide multiple benefits (permeable pavers are traffic calming, esthetically pleasing, provide groundwater recharge, etc.), as well as being longer lasting.
 4. Completion of underground utility improvements should be a key factor in determining paving reconstruction priorities as stated in the city's pavement policy;
 - Coordinate with all utility agencies and working towards "complete utility upgrades" on a street by street basis to reduce the incidence of pave, excavate, and repave scenarios;
 5. Coordinate street improvements with Berkeley's Strategic Transportation Plan (BeST) and Berkeley's Bicycle Plan;
 6. Outline the capital reconstruction projects that will use current and future funding sources to reduce future maintenance costs and that provide multiple benefits beyond smooth streets; and
 7. Outline a process and a schedule to attain and maintain a PCI of 70+.

The PWC would like to recognize the work of staff to update the 5-year paving plan, develop the T1 Implementation Plan, and complete Measure M work all with a 50% turnover of key staff involved in this work. Staff has reviewed Plan proposals and produced new maps and reports following public input. The PWC and staff have worked together to try to address street and watershed needs and public concerns.

We are falling short of our goals for both PCI and in the efforts to change our streets to reflect long-term cost effectiveness, long-run durability and environmental sustainability of our streets. Asphalt streets are expensive in the long-run and cannot be the sole reconstruction solution for all the areas of Berkeley, if we are to efficiently and effectively serve all citizens of Berkeley now and in generations to come. Further clarity and direction on our street program must come from the Council to prioritize goals and expected outcomes with resources that are insufficient to address the future demands in a changing world using historic methods and technology.

¹ Paving materials have the following design useful life. Asphalt Cement (AC) = 20yrs, Portland Concrete Cement(PCC) = 50 yrs., and Permeable Interlocking Concrete Pavers (PICP)= 80yrs

RESOLUTION NO. ##,###-N.S.

APPROVAL OF THE PAVING PLAN FOR FY 2018

WHEREAS, the Street Rehabilitation Policy, Resolution No. 55,384-N.S. approved on May 22, 1990, requires there be a 5-Year Street Paving Plan for the entire City to be adopted by the City Council, with the advice of the Public Works Commission; and

WHEREAS, on October 5, 2017, the Public Works Commission voted to recommend approval of only the first year of the 5 Year Paving Plan recommendation drafted by the Paving Subcommittee and to request additional time for Commission review of the Paving Policy;

WHEREAS, the Public Works Commission recommends Council adopt the FY 2018 portion of the proposed 5 Year Paving Plan, attached as Exhibit A;

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the FY 2018 Street Paving Plan attached as Exhibit A hereof, is hereby adopted.

Exhibit A: Street Paving Plan for FY 2018.



Lori Droste, District 8
Susan Wengraf, District 6

CONSENT CALENDAR
July 19, 2016

TO: Honorable Mayor and City Council

FROM: Councilmembers Lori Droste, Susan Wengraf,
Linda Maio, and Kriss Worthington

SUBJECT: Commission Work Plans

RECOMMENDATION

Commissions—with the exception of the Board of Library Trustees, Design Review Committee, and the Zoning Adjustments Board—will submit a work plan detailing its goals and objectives for the year. Plans will be submitted at the start of the fiscal year, annually.

FINANCIAL IMPLICATIONS

Although additional staff time will be needed to assist commissions in drafting work plans, staff time will be reduced overall if misaligned commission referrals are reduced. In addition, if boards and commissions do not direct city staff to perform research, gather information, or otherwise engage in activities involving projects or matters that are not aligned with the City's Strategic Plan, staff will be able to make more efficient use of their time.

BACKGROUND

The City of Berkeley is in the process of introducing its first strategic plan. To ensure that Berkeley's commissions are in alignment with the overall mission of the City, commissions should submit annual work plans. Each work plan should contain the following information:

1. Commission mission statement
2. What are the commission's goals? In order to achieve these objectives, please specify:
 - a. Resources
 - i. What specific resources are needed and available to achieve desired change? (i.e. staff time, \$, time, materials, equipment)
 - b. Program activities
 - i. What will the commission do with its resources?
 - ii. Processes, tools, events, technology, actions that are employed to bring about the intended objectives.

- c. Output(s)
 - i. What will be the direct results of commission activities?
 - ii. How much will be done? (i.e. Number of forums/meetings held, # of participants reached, etc.)
- d. Outcomes
 - i. The specific changes desired/achieved in the short-term (1-3 years) and long-term (4-6 years)

Outcomes should be measurable, action-oriented, and realistic (W. K Kellogg Foundation, 2004).

ENVIRONMENTAL SUSTAINABILITY

Not applicable

CONTACT PERSON

Lori Droste, City Councilmember District 8, 510-981-7180

Susan Wengraf, City Councilmember District 6, 510-981-7160

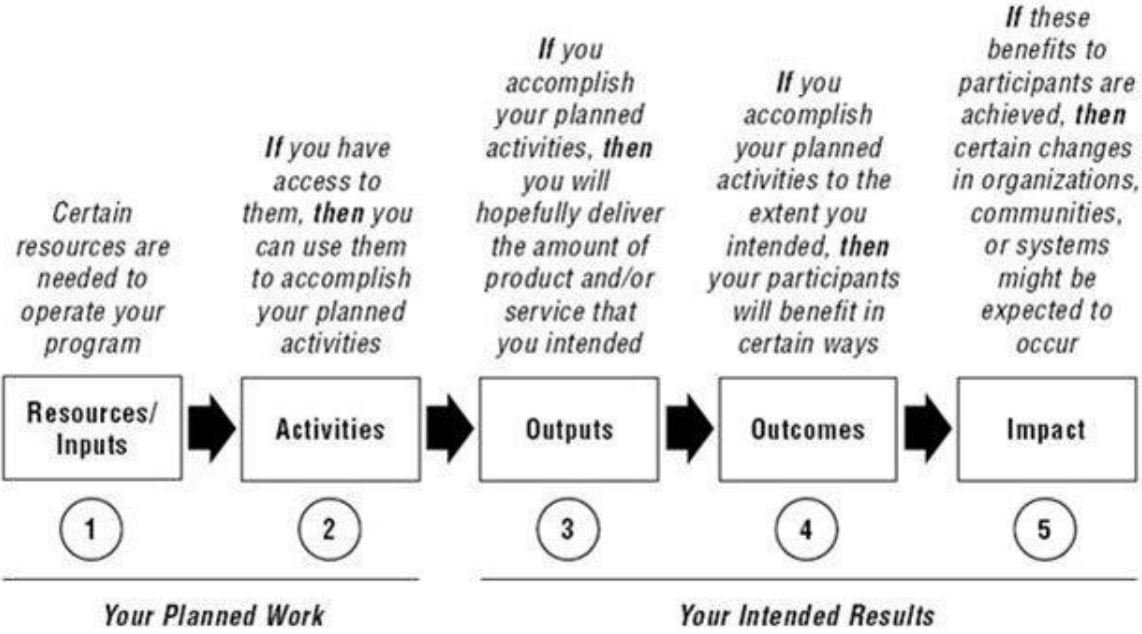
Attachments:

1: Logic Model Summary (W.K. Kellogg Foundation)

Logic Model Summary

A logic model brings program concepts and dreams to life. It lets stakeholders try an idea on for size and apply theories to a model or picture of how the program would function.

The program logic model is defined as a picture of how your organization does its work – the theory and assumptions underlying the program. A program logic model links outcomes (both short- and long-term) with program activities/processes and the theoretical assumptions/principles of the program.



The Basic Logic Model components shown above are defined below. These components illustrate the connection between your planned work and your intended results.

They are depicted numerically by steps 1 through 5.

YOUR PLANNED WORK describes what resources you think you need to implement your program and what you intend to do.

1. Resources include the human, financial, organizational, and community resources a program has available to direct toward doing the work. Sometimes this component is referred to as Inputs.

2. Program Activities are what the program does with the resources. Activities are the processes, tools, events, technology, and actions that are an intentional part of the program implementation. These interventions are used to bring about the intended program changes or results.

YOUR INTENDED RESULTS include all of the program's desired results (outputs, outcomes, and impact).

3. Outputs are the direct products of program activities and may include types, levels and targets of services to be delivered by the program.

4. Outcomes are the specific changes in program participants' behavior, knowledge, skills, status and level of functioning. Short-term outcomes should be attainable within 1 to 3 years, while longer-term outcomes should be achievable within a 4 to 6 year timeframe. The logical progression from short-term to long-term outcomes should be reflected in impact occurring within about 7 to 10 years.

5. Impact is the fundamental intended or unintended change occurring in organizations, communities or systems as a result of program activities within 7 to 10 years. In the current model of WKKF (W.K. Kellogg Foundation) grantmaking and evaluation, impact often occurs after the conclusion of project funding.

Compiled from:
W.K. Kellogg Foundation. "Logic Model Development Guide." (2004)