CITY OF BERKELEY

Office of the City Manager

<u>WORKSESSION</u>
October 27, 2015

To: Honorable Mayor and Members of the City Council

From: *DWR* Dee Williams-Ridley, Interim City Manager

Submitted by: Phillip Harrington, Acting Director, Public Works

Subject: Measure M Paving and Green Infrastructure Program Update

<u>INTRODUCTION</u>
The purpose of this worksession is to provide a program update on the City's Measure M implementation plan to accelerate paving and integrate green infrastructure (Green Infrastructure) when appropriate and consistent with the Watershed Management Plan (WMP).

<u>CURRENT SITUATION AND ITS EFFECTS</u>
Staff is in the third year of the five-year Measure M implementation plan approved by the City Council in Fall 2013. Through the end of calendar year 2015, 8 miles will have been paved with $7 million of Measure M funding. During the same period, a grand total of 17 miles will have been paved with $14 million of funding from all sources, including Measure M, Gas Tax, General Fund, and Measure B. During the five-year Measure M implementation period ending in FY 2018, staff projects approximately 34 miles will be paved with $22 million in Measure M funding, and a grand total of 51 miles will be paved with $43 million in funding from all sources listed above and Measure BB beginning in FY 2016. In total, just under a quarter of the City's street network will be repaved. These projections reflect staff's proposed 5-year paving plan for FY 2016-2020 that will be presented to Council for approval on November 17, 2015.

From Fall 2013 to date, four Green Infrastructure sites have been constructed with Measure M funding, not including the full width permeable paver installation on Allston Way. During the five-year implementation period, staff plans the construction of sixteen green infrastructure sites with Measure M funding, as further explained below. The green infrastructure will reduce localized flooding and improve water quality.

<u>Paving</u>
The additional funding from Measure M has enabled staff to significantly accelerate street paving. The average miles paved during Measure M implementation are more than double the average amount paved before Measure M. In FY 2015 staff began incorporating more cost-effective alternate pavement treatments that will result in an estimated savings of $1.5 to $2 million that will be used to pave more streets. Staff will be monitoring these alternative treatments for life cycle cost effectiveness. Beginning in

FY 2013, preventive maintenance treatments including more crack sealing and a new annual slurry sealing program were established, consistent with current pavement management best practices and as recommended in the November 2011 City Auditor's report "Failing Streets: Time to Change Direction to Achieve Sustainability.

The Pavement Condition Index (PCI) is an indicator of pavement condition on a scale from 0-100. A score from 0-24 is considered "Failed", 25-49 "Poor", 50-59 "At Risk", 60-69 "Fair", 70-79 "Good", and 80-100 "Very Good/Excellent". The Metropolitan Transportation Commission has established a target PCI of 75 for the Bay Area. In FY 2013 the City's citywide PCI was 58. In December 2013, in response to the City Auditor's report and to reflect the additional Measure M funding, the City Manager set the desired citywide PCI to be 66-70 by the end of the five-year Measure M implementation period. A range was established to reflect the fact that the application of Measure M funding for Green Infrastructure affects the PCI outcome, and at the time the amount to be allocated to Green Infrastructure was unknown.

The accelerated paving is projected to increase the citywide PCI from 58 in FY 2013 to 65 in FY 2018. The table below shows the actual and projected PCIs from FY 2013 through FY 2018.

Street Type	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Total Miles Paved
Arterial	70	69	67	69	69	75	8.0
Collector	50	56	68	67	67	69	11.7
Residential	58	56	55	55	57	58	31.4
Citywide	58	58	62	63	64	65	51.1

The PCI of arterial streets is projected to increase from 70 to 75, and on collector streets from 50 to 69. The PCI of residential streets will remain 58 even though paving was accelerated on those streets because of the large number of residential streets whose PCI declined rapidly during the period. A rapid decline in PCI has a disproportionate impact on the overall PCI.

Green Infrastructure

Staff has implemented a number of green infrastructure installations throughout the City with funding from Measure M. The table below shows the completed and planned Green Infrastructure sites by year, location, and type from FY 2014 through FY 2018. The attached citywide map shows the location of the street paving and Green Infrastructure installations.

Map #	Year	Location	Improvement Type
1 *	2014	Allston Way from MLK to Milvia	Permeable pavers
2		Allston and California (Presentation Park)	Bioswale

3		Vine and Spruce	Bioswales
4		Eunice from Milvia to Henry	Cistern, permeable pavers
5		Milvia and Hopkins	Permeable pavers, tree well filter
6	2016	Parker from 9th to 10th (moved from 2015)	Cistern, bioswale
7		Woolsey from Adeline to Tremont	Cistern, bioswale
8		University and Shattuck	Permeable pavers
9		Rose and Hopkins	Bioswale
10		Hearst and Oxford (Hearst Complete Streets)	Bioswale
11	2017	Hopkins near Colusa (King School Park)	Bioswale
12		Hopkins and The Alameda (North Branch Library)	Bioswale
13		MLK and Center (Civic Center Park)	Bioswale
14		Shattuck from Center to University	Permeable pavers, bioswale
15	2018	Dwight and Sacramento	Permeable pavers
16		Derby and Hillegass (Willard Park)	Cistern, bioswale
17		Ward near Park (San Pablo Park)	Bioswale

* Not funded by Measure M.

Sites were carefully selected in accordance with criteria set forth in the Watershed Management Plan. Staff's goal has been to install a variety of types of green infrastructure around the City, closely monitor and evaluate them particularly during storm events, and incorporate lessons learned into future installations. This "demonstration project" approach has been very beneficial. During the winter of 2014 staff frequently visited the FY 2014 sites to collect data and make visual observations. The monitoring and evaluation of all sites will be an ongoing activity in the coming years.

Staff worked closely with the Public Works Commission to develop the paving plan including Green Infrastructure. During their review of the FY 2014 and FY 2015 paving plans, the Commission requested that Green Infrastructure sites be added to staff's initial proposals. In response, staff added four sites, included in the table above. This fall interpretive signs will be installed at the Vine and Spruce and Allston and California Green Infrastructure sites to provide information about the purpose and benefits of Green Infrastructure and interpretive signage will continue to be part of the Green Infrastructure design process.

Construction of the FY 2015 paving is still underway and is anticipated to be completed in November 2015. Construction of the 2016 paving and Green Infrastructure approved by Council on June 3, 2014 is scheduled for spring and summer 2016.

BACKGROUND
In November 2012, voters approved Measure M, a $30 million bond measure to accelerate street improvements and integrate green infrastructure where appropriate and consistent with the Watershed Management Plan. Measure M funding significantly increases funding for street paving from pre-Measure M levels and provides funding for

green infrastructure. The bond proceeds are to be spent from FY 2014 through FY 2018.

In 2013, the Public Works Commission led an extensive community outreach process for Measure M. The process gathered significant community input and created outcome and performance measures, monitoring and oversight recommendations, and scorecard criteria to be added to the paving plan development process. The process and resulting recommendations were summarized in the PWC's Integrated Streets Investment Plan submitted to Council on October 2013.

Staff takes a deliberative approach to selecting streets to include in the paving plan, utilizing the Street Rehabilitation and Repair Policy and Measure M scorecard criteria. The 5-Year Plan is generated with the aid of Streetsaver software developed by the Metropolitan Transportation Commission and used by all cities in the Bay Area. Streetsaver criteria for street selection include: a) pavement condition, b) type of repair required, c) road classification (arterial, collector, residential), d) cost effectiveness, and e) budget constraints. The Street Rehabilitation and Repair Policy further guides the development of the paving plan, as follows:

- Implement integrated solutions
- Coordinate with other City programs
- Coordinate with utility company work
- Budget distributed to: arterials – 10%, collectors – 50%, residential – 25%, discretionary and demonstration – 15%
- Prioritize collector and residential streets with AC Transit bus routes or bicycle routes
- Improve contiguous blocks rather than one block at a time as much as possible.

In FY 2016 Measure BB added $1.3 million per year to the City's baseline street paving budget.

ENVIRONMENTAL SUSTAINABILITY

The paving plan includes the installation of a wide variety of green infrastructure improvements (bioretention cells, permeable pavers, tree well filters, cisterns, etc.) at locations throughout the City, to serve as demonstration projects for future implementation. The improvements will treat polluted urban runoff before it reaches local creeks and the Bay, and minimize potential flooding.

Alternative pavement treatments full depth reclamation and cold in place recycling recycle much of the existing pavement and sub base in place, reducing truck trips, and helping manage the dwindling supply of virgin aggregate.
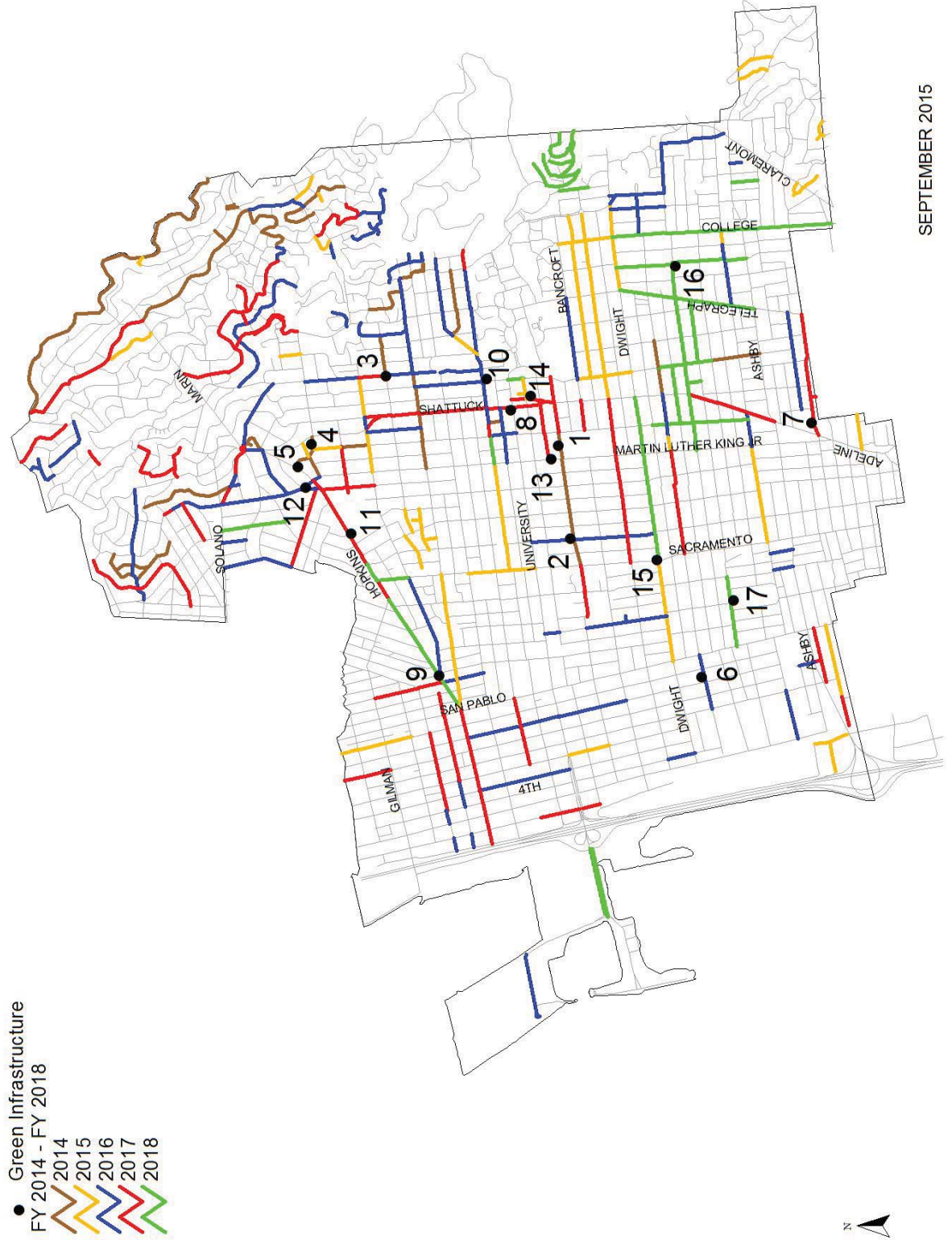
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Attachments:
1: FY 2014 – FY 2018 Citywide Paving and Green Infrastructure Map

SEPTEMBER 2015

Green Infrastructure
FY 2014 - FY 2018
2014
2015
2016
2017
2018

CLAREMONT

COLLEGE

BANCROFT

DWIGHT

TELEGRAPH

ASHBY

MARTIN LUTHER KING JR

ADELINE

SHATTUCK

MARIN

SOLANO

HOPKINS

UNIVERSITY

SACRAMENTO

SAN PABLO

GILMAN

4TH

DWIGHT

ASHBY