



Public Works Commission

ACTION CALENDAR

January 21, 2020

(Continued from December 10, 2019)

To: Honorable Mayor and Members of the City Council

From: Public Works Commission

Submitted by: Ray Yep, Chair, Public Works Commission

Subject: Public Works Commission Recommendation for the Five-Year Paving Plan

RECOMMENDATION

Adopt a resolution that recommends approval of the Five-Year Paving Plan for FY2020 to FY2024 as proposed by Staff and recommends the creation of a Long-Term Paving Master Plan.

SUMMARY

This Report to Council is comprised of three sections:

1. Recommendations on the City’s Proposed 5-Year Paving Plan
2. Report to Council on requested actions from 2017 and 2018
3. Recommendation from the Public Works Commission (PWC) to address the on-going paving condition deficit through the creation and implementation of a Long-Term Paving Master Plan.

The City of Berkeley’s Street Rehabilitation and Repair Policy (Street Policy) requires that a 5-year paving plan be reviewed each year and adopted formally by the City Council, with advice from the PWC. The Rehabilitation Plan (commonly called the Paving Plan) for FY 2020 to FY 2024 has been reviewed by the PWC and it is recommending adoption of all five years of the plan.

At their meetings in December 2017 and 2018, City Council directed Staff to coordinate with the PWC on the items outlined in their motions. A progress report on the action items was submitted to Council on July 24, 2018. All of the action items have been worked on and this report highlights the status.

Berkeley’s streets are in an “at-risk” condition, far from the City’s target of having our streets in “good” condition, and continue to decline year on year. The PWC recommends that a master plan be prepared to understand the funding and resources needed to improve Berkeley’s streets to a “good” condition.

FISCAL IMPACTS OF RECOMMENDATION

This Paving Plan is based on the Adopted Biennial Budget for Fiscal Years 2020 & 2021, and on the following estimated available funding levels from all sources, including State Transportation (Gas) Tax, Measure B, Measure BB, Measure F, and the General Fund.

Five-Year Paving Program Funding Sources by Year, in \$					
Fund Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
State Transportation Tax	495,303	495,303	495,303	495,303	495,303
State Transportation Tax –SB1	1,500,000	1,700,000	1,700,000	2,000,000	2,000,000
Measure B - Local Streets & Roads	700,000	1,000,000	700,000	0	0
Measure BB – Local Streets & Roads	2,200,000	1,700,000	2,000,000	2,700,000	2,700,000
Measure F Vehicle -Registration Fee	155,000	155,000	155,000	155,000	155,000
Capital Improvement Fund	1,925,000	1,925,000	1,925,000	1,925,000	1,925,000
TOTAL	6,975,303	6,975,303	6,975,303	7,272,303	7,272,303

In addition to the City's program funding, additional grant and bond funding has been made available for paving in FY 2020 and 2021, summarized below.

Other Funding for Paving by Year, in \$					
Funding Source	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Measure T1 approved	7,500,000	1,000,000	0	0	0
Grants	2,777,000	1,200,000	0	0	0
TOTAL	10,277,000	2,200,000	0	0	0

The PWC is recommending the preparation of a Long-Term Paving Master Plan. This is currently not budgeted and a request to fund the work needs to be prepared and submitted.

CURRENT SITUATION AND ITS EFFECTS

In December 2017 and 2018, the PWC made recommendations on the 5-year paving plan and provided a detailed analysis of Berkeley's street condition in our reports to Council. Based on the city-wide Pavement Condition Index (PCI), Berkeley's streets continue to be evaluated as "at risk," and do not meet the City's target to be in "good" condition. Council requested certain analysis and action be taken.

This report addresses the following topics:

1. Recommendations on the City's Proposed 5-Year Paving Plan
2. Report to Council on requested actions from 2017 and 2018

3. Recommendation from the Public Works Commission (PWC) to address the on-going paving condition deficit through the creation and implementation of a Long-Term Paving Master Plan.

Review of 5-year Paving Plan

A significant amount of street paving was done in the summer of 2019. This includes the paving delayed from 2018, the paving approved for 2019, and paving the Panoramic Hill area.

Staff prepared a list of paving projects for the new 5-year planning period (FY 2020 – 2024). This was prepared using guidance from Berkeley’s Street Rehabilitation Policy, StreetSaver program analysis, knowledge of what has been accomplished in recent years, and available funding. The proposed plan is summarized as follows.

	FY2020	FY2021	FY2022	FY2023	FY2024	Total	% of Total
<u>Square Footage of Paving</u>							
Arterials, sq. ft.	84,360	0	77,580	6,600	0	168,540	6
Collectors, sq. ft.	400,480	6,900	58,810	63,250	163,170	754,710	26
Residential, sq. ft.	284,758	477,584	474,528	366,739	365,668	1,969,277	68
Total sq. ft.	769,598	546,584	610,918	436,589	528,838	2,892,527	100
<u>Miles</u>							
Arterials, miles	0.32	0.00	0.41	0.04	0.00	0.77	5
Collectors, miles	1.77	0.51	0.23	0.62	0.81	3.94	24
Residential, miles	1.58	3.33	2.39	2.17	1.93	11.40	71
Total miles	3.67	3.84	3.03	2.83	2.74	16.11	100
<u>Cost</u>							
Arterials, \$millions	\$0	\$0	\$0.896	\$0.078	\$0	\$0.974	3
Collectors, \$millions	\$2.521	\$0.881	\$0.956	\$1.290	\$1.946	\$7.594	24
Residential, \$millions	\$3.744	\$5.041	\$2.996	\$3.252	\$3.957	\$18.990	60
Discretionary, \$millions	\$0	\$1.046	\$1.046	\$1.091	\$1.091	\$4.274	13
Total cost, \$millions	\$6.265	\$6.968	\$5.894	\$5.711	\$6.994	\$31.832	100

The above summary does not include \$7.5 million in FY 2020, and \$1 million in FY 2021 from Measure T1 funding. It also does not include \$3.98 million in grant funding in FY2020 and FY2021.

The PWC paving subcommittee discussed the plan with Public Works Department staff and we have the following comments.

1. The Paving Plan uses asphalt paving technology. As such, the plan is not contributing to reducing greenhouse gas emissions. The PWC encourages staff to use greener and more sustainable technologies to help meet our climate action

goals. One suggestion is to start calling this a “street surface treatment plan” and not paving plan.

2. Staff prepared a process flow diagram that describes the inputs used to prepare the 5-year paving plan. This document provides a high-level overview of all the work that staff puts into the development of the paving plan and it has been very informative for the PWC. This has been included as Attachment 3 to this report for Council’s review.
3. Many of the City’s streets with the lowest PCI are residential streets. The proposed plan by staff shifts more focus of the paving plan to residential streets. While this is outside of the City’s Paving Policy for allocation of paving funds by street type, this plan helps address the roads that are in the greatest need and will do the most to improve the City-wide average PCI. The PWC believes that on a long-term basis, the Paving Policy is still valid to prioritize funding for arterials, collectors, bike routes, and bus routes. The following is a breakdown as compared to the Paving Policy:

	Cost Breakdown Per Paving Policy	Cost Breakdown Per 5-Year Paving Plan (FY2020-2024)
Arterial streets	10%	3%
Collector streets	50%	24%
Residential streets	25%	60%
Discretionary	15%	13%

4. The plan was reviewed with the City of Berkeley’s Bicycle Plan 2017. Of the total length of streets to be paved, 5.8 miles (36%) are current or future bike routes. However, of those 5.8 miles, 1.6 miles (27%) are on Hopkins or Cedar and just doing the pavement does not bring the streets to the requirements of the Berkeley Bicycle Plan. To complete the bikeways on these streets, additional funding is needed from the Transportation Division and a project is needed prior to paving beginning on these streets. The plan was also reviewed with the Transportation Commission and with their concerns about bike routes.
5. The PWC has reviewed the plan for contiguous streets and that the work is bundled for cost effective implementation. This is balanced with having the paving work be spread across all Council Districts of the City. Over the 5-year Paving Plan, the cost is distributed between 7% to 16% for each District.
6. The PWC agrees with including the streets that were approved under Phase 1 of Measure T1. However, the PWC recommends that bond funds be used only for work that will last for at least as long as the duration of the bond repayment period (this would be 40 years in the case of projects funded by Measure T-1 bond proceeds). Road treatments that match this recommendation only include full street reconstruction work, as other standard maintenance may extend the life of these assets beyond the duration of the bond repayment period. Maintenance work, such

as overlays, cape and slurry seals, should be funded from the Paving Program funds or the General Fund.

7. Specific attention should be given to the Adeline Corridor Specific Plan and its proposed changes to the street alignment. The street will be repaved using Measure T1 funds. This means that changes to the street may occur before the debt financing is paid off.
8. The PWC agrees that 15% of the available funding should be reserved for discretionary and/or demonstration projects. The PWC is in the process of developing a recommendation for criteria to help prioritize projects to be funded with the discretionary reserve.

Progress with Council Requested Actions

At their meetings in December 2017 and 2018, City Council directed Staff to coordinate with the PWC on the items outlined in their motions. A progress report on the action items was submitted to Council on July 24, 2018. Progress continues to be made on the action items and we would like to highlight the following.

1. Use of life cycle cost analysis – The City received a grant from the Metropolitan Transportation Commission (MTC) for technical assistance to evaluate life cycle cost analysis for street paving technologies. The MTC has retained Pavement Engineering Inc. (PEI) to conduct the analysis. The PWC paving sub-committee is working closely with PEI and staff on the study. The study will evaluate the life cycle cost of asphalt and alternative technologies, including permeable pavement, and will consider multiple benefits from each. These benefits, called externalities, include considerations for attenuating storm water peak flows, improving water quality, reducing traffic speeds, enhanced public safety, and reducing greenhouse gas emissions. PEI's analysis is projected to be completed in fall 2019.
2. Use of 15% discretionary and demonstration funds – The PWC paving sub-committee is working with staff to identify potential sites for permeable pavement projects or alternative durable pavement technologies. We are developing a matrix of criteria and candidate locations. The criteria include current condition, soil permeability, constructability, location attributes, life cycle cost analysis, and other factors. An allocation of 15% discretionary and demonstration funds has been included in FY2021-2024.
3. Work with consultants who have experience with long-lasting innovative technologies – The City retained several new on-call civil engineering consultants in 2018. The consultants include Bellecci and Associates, Harrison Engineering Inc., Pavement Engineering Inc., and Mark Thomas Company. All of these firms have demonstrated experience with long-lasting innovative and green infrastructure.
4. Report to Council on funding sources for scheduled and completed paving – A report to Council was made on September 10, 2019 on the breakdown of paving costs.

5. Annual report to Council on Measure M – The Public Works Department staff will prepare a report on the performance of Measure M at the completion of the 2019 paving season and the completion of the Woolsey Street stormwater cistern project.
6. Consult with Transportation Commission – Members from the Transportation Commission have participated at the PWC’s paving sub-committee meetings and a presentation of the 5-year paving plan was given to the Transportation Commission on June 20, 2019.

Master Plan to Improve the Condition of Berkeley’s Streets

The current citywide average PCI is 58 on a scale of 100, and is firmly in the “at risk,” category. Streets in this category tend to degrade at a more accelerated rate than those in a “good” or “fair” condition. Under the proposed paving plan, the PCI is estimated to dip to 52 by 2023. This is far from the City’s target of having our streets in “good” condition (PCI of 70 -79), and it is clear that action is needed to reverse this trend before our road fall into “failing” condition. Below is a summary of the current conditions of Berkeley’s streets by road type. This information was prepared by staff and PEI.

Section/Area	PCI in 2019
Overall system	58
Arterial streets	66
Collector streets	64
Residential streets	55
Bus routes	66
Bike lanes	62

The PWC recommends that a master plan be prepared to understand the funding and resources needed to improve Berkeley’s streets to a “good” condition. The master plan should represent street paving priorities that align with the values of the city and should consider the following:

1. Update the Street Policy – The policy was last updated in 2009. The policy should be reviewed and updated to incorporate current thinking about using life cycle cost analysis, Vision Zero, equity, sustainable multi-benefit technologies, the Bicycle Plan recommendations, Climate Action Plan, Resilience Strategy, Local Hazard Mitigation Plan, and other factors. With these considerations in mind, the updated policy should include new performance metrics that capture the diverse objectives the City holds for our road network.
2. A long-term paving capital plan – The Master Plan should include a 40-year paving or road surfacing plan to help the City identify the most efficient path to move the current PCI from “at risk” to “good.” This approach spans two cycles of typical asphalt roads expected useful life, and allows for decisions on street surfacing to be

optimized for the greatest bang for our buck over the full life of our assets, rather than the current short-term approach.

3. Equity -- The City's Street Policy calls for street paving to be equitably allocated among the City's nine districts. This is a worthy goal; however, the policy stops there and does not provide a clear method for how to evaluate equity. Should it be measured by dollars spent, miles paved, miles treated, the average PCI in a district, and should this equity be for each year of the paving plan over the full five years of the paving plan, or measured retrospectively? The Master Plan will propose a more definitive metric that will provide a clear directive to staff moving forward and provide the community with enhanced transparency in the City's paving decisions.
4. Financing Strategy -- Lack of funding for street paving plays a major role in the overall condition of the City's streets. As part of the Master Plan, the work should include a long-term funding gap analysis, a financial plan to address the funding gap, a cost-of-service rate study to develop recommended rates needed to sustainably finance the Paving Program, and an impact fee analysis to allow the City to recoup the cost of accelerated wear on our roads imposed by heavy vehicles. We also recommend the master plan include an evaluation of grant funding opportunities.
5. Public Engagement -- Public feedback is critical to the successful implementation of any City Plan. The Master Plan should provide guidance for public engagement strategies that will allow the collection and synthesis of public feedback regarding the future of the City streets.

The recommendation to approve both the 5-year paving plan and the recommendation for a Paving Master Plan and to forward it to Council was discussed by the Public Works Commission at its July 11, 2019 meeting.

Action: M/S/C (Schueler/Dominguez)

Vote: (8 Ayes: Yep, Schueler, Dominguez, Hitchen, Constantine, Krpata, Erbe, Freiberg; 0 Noes; 1 Absent: McGrath; 0 Abstain)

ENVIRONMENTAL SUSTAINABILITY

Permeable pavers provide a way of reducing the volume of storm water entering the City storm drain system; improving the quality of urban runoff from the roadway that is conveyed to local creeks and the Bay; and reducing greenhouse gas emissions by installing a durable product that requires less maintenance than traditional asphalt concrete.

Full Depth Reclamation (FDR), a cost-effective alternative to traditional street reconstruction methods, is planned for use in several of the streets selected for rehabilitation. It recycles much of the existing pavement on site, and incorporates it into the pavement subgrade, thereby reducing truck trips to and from construction sites.

In addition, the Paving Plan includes repair of the City's deteriorating storm drain infrastructure that minimizes degradation of water quality in local creeks and the Bay. These repairs are consistent with the City of Berkeley's 2011 Watershed Management Plan. Furthermore, the Paving Plan also proposes approximately 5.8 miles of improvements to bicycle routes, and improvements to sidewalk and curb ramps adopted from the Bicycle and Pedestrian Plans. These steps result in lower emissions of greenhouse gases into the environment, which is consistent with the goals of the 2009 Berkeley Climate Action Plan.

RATIONALE FOR RECOMMENDATION

It is the policy of the City of Berkeley that there shall be a Five-year Street Rehabilitation Plan for the entire City to be adopted by the City Council. Further, the proposed plan provides for much needed street infrastructure improvements that are consistent with the City's Street Policy.

ALTERNATIVE ACTIONS CONSIDERED

None

CITY MANAGER REPORT

See companion report.

CONTACT PERSON

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Attachments:

1. Resolution

Exhibit A: Five-Year Street Rehabilitation Plan Update to Council, July 24, 2018

2. 5-Year Paving Plan Process Flow Diagram

Attachment 1

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

APPROVAL OF THE FIVE-YEAR PAVING PLAN FOR FY 2020 TO FY2024 AND
RECOMMENDATION FOR THE CREATION OF A LONG-TERM PAVING MASTER
PLAN

WHEREAS, the Street Rehabilitation Policy, Resolution No. 55,384-N.S. approved on May 22, 1990, requires there be a Five-Year Street Paving Plan for the entire City to be adopted by the City Council, and

WHEREAS, the City Council requests advice from the Public Works Commission on the Five-Year Paving Plan; and

WHEREAS, on July 11, 2019, the Public Works Commission voted to approve submitting the FY 2020 to FY2024 Five-year Paving Plan to City Council, attached as Exhibit A;

WHEREAS, the condition of Berkeley's streets are at an "at risk" condition and a long-term strategy is needed to improve the condition to the "good" level,

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the FY 2020 to FY2024 Five-Year Paving Plan attached as Exhibit A hereof and the request to create a long-term paving master plan, are hereby adopted.

Exhibit A: Five-Year Paving Plan for FY2020 to FY2024

EXHIBIT A
5-YEAR STREET REHABILITATION PLAN FOR FY 2020 TO FY 2024

Revised: 05/22/2019

Fiscal Year	Street ID	Section ID	Street Name	From	To	Class	Treatment (from StreetSaver)	Updated Total Cost	District	P	Mileage	Current PCI	Last M&R Date	Last M&R	Last Paved
2020	321100	30	CEDAR ST	6TH ST	SAN PABLO AVE	C	Reconstruct	\$ 1,239,036	1	3C*	0.31	27	10/1/1994	O -	MILL AND OVERLAY W/FABRIC
2020	320685	10	MARINA BLVD	SPINNAKER WAY	UNIVERSITY AVE	C	Heavy Mtce		1	N	0.43	58	9/1/1986	A - AC	OVERLAY
2020	735382	60	MILVIA ST	BLAKE ST	RUSSELL ST	R	Heavy Rehab	\$ 764,300	3	3E	0.44	28	9/1/1993	A - AC	RECONSTRUCT SURFACE (AC)
2020	516492	75	ROSE ST	LE ROY AVE	LA LOMA AVE	R	Reconstruct	\$ 205,000	6	N	0.14	0		A - AC	
2020	319525	35	SANTA FE AVE	GILMAN ST	CORNELL AVE & PAGE	R	Heavy Rehab	\$ 409,600	1	3C*	0.27	49	7/1/1995	A - AC	RECONSTRUCT STRUCTURE (AC)
2020	319525	30	SANTA FE AVE	NORTH CITY LIMIT	GILMAN ST	R	Light Mtce	\$ 37,355	1	3C*	0.11	60	8/31/2004	O -	MILL AND THIN OVERLAY
2020	115532	77	SHASTA RD	GRIZZLY PEAK BLVD	PARK GATE	C	Heavy Rehab	\$ 86,667	6	N	0.05	14	11/1/1988	A - AC	RECONSTRUCT SURFACE (AC)
2020	115532	79	SHASTA RD	PARK GATE	EAST CITY LIMIT (GOLF	C	Reconstruct	\$ 234,789	6	N	0.11	10	11/1/1988	A - AC	RECONSTRUCT SURFACE (AC)
2020	320686	10	SPINNAKER WAY	BREAKWATER DR	MARINA BLVD	R	Reconstruct	\$ 1,000,000	1	N	0.28	24	8/1/1991	A - AC	OVERLAY
2020	213386	22	MONTEREY AVE	THE ALAMEDA	HOPKINS ST	C	Heavy Rehab	\$ 960,667	5	2A	0.57	54	11/30/2011	A - AC	MILL AND OVERLAY
2020	933653	40	WARD ST	SAN PABLO AVE	ACTON ST	R	Reconstruct	\$ 1,328,400	2	N	0.31	20	9/1/1991	A - AC	MILL AND OVERLAY W/FABRIC
2020	320620	15	UNIVERSITY AVE	MARINA BLVD	WEST FRONTAGE RD	C	Reconstruct		1, 2	N	0.30	0	12/1/1989	A - AC	OVERLAY
2020	729533	55	SHATTUCK AVE	CENTER ST	ALLSTON WAY	A	Reconstruct		4		0.06	2	7/1/1994	O -	MILL AND OVERLAY W/FABRIC
2020	729533	57	SHATTUCK AVE (SB)	CENTER ST	UNIVERSITY AVE	A	Reconstruct		4		0.13	12	7/1/1994	O -	MILL AND OVERLAY W/FABRIC
2020	729007	64	ADDISON ST	SHATTUCK AVE	SHATTUCK AVE	R	Heavy Rehab		4		0.03				
2020	729051	52	BERKELEY SQUARE	ADDISON ST	CENTER ST	A	Heavy Rehab		4		0.06				
2020	729535	50	SHATTUCK SQUARE	UNIVERSITY AVE	ADDISON	A	Heavy Rehab		4		0.07	28	7/1/1994	O -	MILL AND OVERLAY W/FABRIC
								\$ 6,265,814			3.69				

Note: Column P denotes presence of bike facility type (1 paved path, 2A 2B bike lane, 3A sign-only, 3C Sharrows, 3E bike blvd, 4 cycle track); C for bus route; and N for none.

*Proposed bike facilities from 2017 Bike Plan.

EXHIBIT A
5-YEAR STREET REHABILITATION PLAN FOR FY 2020 TO FY 2024

Revised: 05/22/2019

Fiscal Year	Street ID	Section ID	Street Name	From	To	Class	Treatment (from StreetSaver)	Updated Total Cost	District	P	Mileage	Current PCI	Last M&R Date	Last M&R	Last Paved
2021	940005	70	ACTON ST	ASHBY ST	66TH ST	R	Light Mtce	\$ 83,640	2	N	0.23	60	8/29/2007	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	516020	30	ARCADE AVE	GRIZZLY PEAK BLVD	FAIRLAWN DR	R	Heavy Rehab	\$ 63,378	6	N	0.06	7	6/1/1995	O -	MILL AND OVERLAY W/FABRIC
2021	628042	78	BANCROFT WAY	BOWDITCH ST	COLLEGE AVE	C	Heavy Mtce	\$ 161,036	7	3C*	0.13	62	12/1/1990	O -	MILL AND OVERLAY W/FABRIC
2021	627042	80	BANCROFT WAY	COLLEGE AVE	PIEDMONT AVE	C	Heavy Rehab	\$ 254,076	7	3C*	0.13	57	12/1/1990	O -	MILL AND OVERLAY W/FABRIC
2021	829102	60	CENTER ST	MARTIN LUTHER KING	MILVIA ST	R	Heavy Rehab	\$ 315,645	4		0.13	59	7/1/1991	A - AC	RECONSTRUCT SURFACE (AC)
2021	729102	63	CENTER ST	MILVIA ST	SHATTUCK	R	Heavy Rehab	\$ 564,000	4	2A*	0.13	72	7/1/1991	A - AC	RECONSTRUCT SURFACE (AC)
2021	111127	10	CRESTON RD	GRIZZLY PEAK BLVD	SUNSET LANE	R	Heavy Mtce	\$ 93,378	6	N	0.36	67	6/1/1995	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	115127	20	CRESTON RD	SUNSET LANE	GRIZZLY PEAK BLVD	R	Heavy Mtce	\$ 116,258	6	N	0.36	64	11/1/1988	A - AC	RECONSTRUCT SURFACE (AC)
2021	728140	50	DANA ST	BANCROFT WAY	DWIGHT WAY	R	Heavy Rehab	\$ 467,400	7	2A to 2B*	0.25	51	12/1/1989	O -	MILL AND OVERLAY W/FABRIC
2021	739141	70	DEAKIN ST	ASHBY AVE	PRINCE ST	R	Light Mtce	\$ 45,920	3	N	0.16	76	4/3/2008	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	736141	68	DEAKIN ST	RUSSELL ST	ASHBY AVE	R	Light Rehab	\$ 109,200	3	N	0.10	57	7/1/1988	O -	MILL AND OVERLAY W/FABRIC
2021	940148	70	DOHR ST	ASHBY AVE	PRINCE ST	R	Heavy Rehab	\$ 176,569	2	N	0.14	53	10/1/1992	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	115344	80	LATHAM LANE	MILLER AVE	GRIZZLY PEAK	R	Heavy Mtce	\$ 38,500	6	N	0.10	61	6/1/1994	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	115380	70	MILLER AVE	HILLDALE AVE	SHASTA RD	R	Light Rehab	\$ 425,880	6	N	0.66	58	6/1/1994	A - AC	RECONSTRUCT STRUCTURE (AC)
2021	830491	58	ROOSEVELT AVE	CHANNING WAY	DWIGHT WAY	R	Light Rehab	\$ 172,480	4	N	0.13	65	12/1/1989	A - AC	RECONSTRUCT SURFACE (AC)
2021	728584	50	TELEGRAPH AVE	BANCROFT WAY	DWIGHT WAY	C	Heavy Rehab	\$ 473,060	7	3C*	0.25	52	7/1/1988	O -	MILL AND OVERLAY W/FABRIC
2021	931657	55	WEST ST	BANCROFT WAY	DWIGHT WAY	R	Heavy Mtce	\$ 263,822	2	N	0.25	65	10/1/1994	O -	MILL AND OVERLAY W/FABRIC
2021	320528	47	2ND ST	DELAWARE ST	HEARST AVE	R	Reconstruct	\$ 775,833	1	N	0.09	2	NA		
2021	320528	48	2ND ST	HEARST AVE	UNIVERSITY AVE	R	Heavy Rehab	\$ 762,222	1	N	0.09	46	NA		
2021	920528	50	2ND ST	UNIVERSITY AVE	ADDISON ST	R	Heavy Rehab	\$ 560,000	2	N	0.09	0	8/27/1997		MILL AND OVERLAY W/FABRIC
2021			15% DISCRETIONARY					\$ 1,046,295							
								\$ 6,968,593			3.84				

Note: Column P denotes presence of bike facility type (1 paved path, 2A 2B bike lane, 3A sign-only, 3C Sharrows, 3E bike blvd, 4 cycle track); C for bus route; and N for none.

*Proposed bike facilities from 2017 Bike Plan.

EXHIBIT A
5-YEAR STREET REHABILITATION PLAN FOR FY 2020 TO FY 2024

Revised: 05/22/2019

Fiscal Year	Street ID	Section ID	Street Name	From	To	Class	Treatment (from StreetSaver)	Updated Total Cost	District	P	Mileage	Current PCI	Last M&R Date	Last M&R	Last Paved
2022	931073	50	BROWNING ST	ADDISON ST	DWIGHT WAY	R	Heavy Rehab	\$ 911,600	2	N	0.50	63	10/1/1995	O -	MILL AND OVERLAY W/FABRIC
2022	638115	70	COLLEGE AVE	ASHBY AVE	SOUTH CITY LIMIT	A	Heavy Rehab	\$ 896,480	8	N	0.41	51	8/23/2000	A - AC	RECONSTRUCT STRUCTURE (AC)
2022	729152	60	DURANT AVE	MILVIA ST	SHATTUCK AVE	C	Reconstruct	\$ 693,355	4	N	0.13	0	11/1/1992	O -	MILL AND OVERLAY W/FABRIC
2022	729152	64	DURANT AVE	SHATTUCK AVE	FULTON ST	C	Heavy Rehab	\$ 262,880	4	N	0.10	28	8/12/1997	O -	MILL AND OVERLAY W/FABRIC
2022	728180	50	ELLSWORTH ST	BANCROFT WAY	DWIGHT WAY	R	Reconstruct	\$ 422,400	7	N	0.25	20	11/1/1992	O -	MILL AND OVERLAY W/FABRIC
2022	736180	60	ELLSWORTH ST	DWIGHT WAY	WARD ST	R	Light Mtce	\$ 129,360	7	N	0.38	83	5/11/2011	A - AC	RECONSTRUCT SURFACE (AC)
2022	736180	65	ELLSWORTH ST	WARD ST	ASHBY AVE	R	Light Mtce	\$ 99,307	3	N	0.29	87	5/11/2011	A - AC	RECONSTRUCT SURFACE (AC)
2022	736227	60	FULTON ST	DWIGHT WAY	BLAKE ST	R	Heavy Mtce	\$ 76,128	3	3E*	0.06	61	6/1/1993	O -	MEDIUM AC OVERLAY (2 INCHES)
2022	736227	61	FULTON ST	BLAKE ST	PARKER ST	R	Heavy Mtce	\$ 27,840	3	3E*	0.07				
2022	736227	63	FULTON ST	PARKER ST	STUART ST	R	Heavy Mtce	\$ 321,592	3	3E*	0.25	61	2/1/1992	O -	THIN AC OVERLAY(1.5 INCHES)
2022	835431	65	OTIS ST	RUSSELL ST	ASHBY AVE	R	Heavy Rehab	\$ 224,000	3	N	0.13	61	4/1/2001	A - AC	RECONSTRUCT STRUCTURE (AC)
2022	736561	70	STUART ST	FULTON ST	HILLEGASS AVE	R	Heavy Rehab	\$ 784,000	7	N	0.46	54	11/13/1998	A - AC	RECONSTRUCT STRUCTURE (AC)
2022			15% DISCRETIONARY					\$ 1,046,295							
								\$ 5,895,237			3.03				

Note: Column P denotes presence of bike facility type (1 paved path, 2A 2B bike lane, 3A sign-only, 3C Sharrows, 3E bike blvd, 4 cycle track); C for bus route; and N for none.

*Proposed bike facilities from 2017 Bike Plan.

EXHIBIT A
5-YEAR STREET REHABILITATION PLAN FOR FY 2020 TO FY 2024

Revised: 05/22/2019

Fiscal Year	Street ID	Section ID	Street Name	From	To	Class	Treatment (from StreetSaver)	Updated Total Cost	District	P	Mileage	Current PCI	Last M&R Date	Last M&R	Last Paved
2023	729042	65	BANCROFT WAY	SHATTUCK AVE	FULTON ST	C	Heavy Rehab	\$ 277,778	4	4*	0.09	32	8/7/1997	O -	MILL AND OVERLAY W/FABRIC
2023	729042	60	BANCROFT WAY	MILVIA WAY	SHATTUCK AVE	C	Heavy Rehab	\$ 359,836	4	N	0.13	28	12/1/1989		MILL AND OVERLAY W/FABRIC
2023	736140	65	DANA ST	BLAKE ST	WARD ST	R	Light Rehab	\$ 454,080	7	3E*	0.25	45	7/30/2008	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	739186	60	EMERSON ST	ADELINE ST	SHATTUCK AVE	R	Light Rehab	\$ 180,320	3	N	0.15	65	4/1/2001	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	839191	60	ESSEX ST	ADELINE ST	TREMONT ST	R	Heavy Mtce	\$ 76,160	3	N	0.06	76	4/1/2001	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	739191	62	ESSEX ST	TREMONT ST	SHATTUCK AVE	R	Light Rehab	\$ 129,920	3	N	0.11	62	4/1/2001	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	637217	80	FOREST AVE	COLLEGE AVE	CLAREMONT BLVD	R	Heavy Rehab	\$ 600,000	8	N	0.36	50	8/1/1996	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	516340	36	LA LOMA AVE	ROSE ST	BUENA VISTA WAY	C	Heavy Rehab	\$ 248,827	6	N	0.16	36	6/1/1995	O -	MILL AND OVERLAY W/FABRIC
2023	516340	38	LA LOMA AVE	BUENA VISTA WAY	CEDAR ST	C	Heavy Rehab	\$ 221,340	6	N	0.14	51	6/1/1995	O -	MILL AND OVERLAY W/FABRIC
2023	834371	65	MC GEE AVE	DERBY ST	RUSSELL ST	R	Light Rehab	\$ 461,992	3	N	0.25	60	12/10/1998	A - AC	RECONSTRUCT STRUCTURE (AC)
2023	834371	60	MC GEE AVE	DWIGHT WAY	DERBY ST	R	Light Rehab	\$ 302,400	3	N	0.26	59	7/1/1988	O -	THIN OVERLAY w/FABRIC
2023	319293	47	HOPKINS ST	GILMAN ST	SACRAMENTO ST	R	Heavy Rehab	\$ 203,942	5	3A, C	0.10	0	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	213293	50	HOPKINS ST	HOPKINS CT	MONTEREY AVE	C	Light Rehab	\$ 75,193	5	3A, C	0.05	54	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	213293	52	HOPKINS ST	MONTEREY AVE	MC GEE AVE	C	Heavy Rehab	\$ 107,167	5	2A, C	0.05	71	12/1/1989		RECONSTRUCT STRUCTURE (AC)
2023	319293	45	HOPKINS ST	NORTHSIDE AVE	PERALTA AVE	R	Light Mtce	\$ 233,587	1	N	0.10	78	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	319293	46	HOPKINS ST	PERALTA AVE	GILMAN ST	R	Heavy Mtce	\$ 433,031	1, 5	N	0.27	64	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	319293	49	HOPKINS ST	SACRAMENTO ST	HOPKINS CT	A	Heavy Rehab	\$ 77,755	5	3A, C	0.04	30	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	319293	40	HOPKINS ST	SAN PABLO AVE	STANNAGE AVE	R	Light Mtce	\$ 19,188	1	N	0.09	73	9/13/2002		MILL AND OVERLAY W/FABRIC
2023	319293	42	HOPKINS ST	STANNAGE AVE	NORTHSIDE AVE	R	Heavy Mtce	\$ 157,658	1	N	0.17	80	9/13/2002		MILL AND OVERLAY W/FABRIC
2023			15% DISCRETIONARY					\$ 1,091,295							
								\$ 5,711,469			2.86				

Note: Column P denotes presence of bike facility type (1 paved path, 2A 2B bike lane, 3A sign-only, 3C Sharrows, 3E bike blvd, 4 cycle track); C for bus route; and N for none.

*Proposed bike facilities from 2017 Bike Plan.

EXHIBIT A
5-YEAR STREET REHABILITATION PLAN FOR FY 2020 TO FY 2024

Revised: 05/22/2019

Fiscal Year	Street ID	Section ID	Street Name	From	To	Class	Treatment (from StreetSaver)	Updated Total Cost	District	P	Mileage	Current PCI	Last M&R Date	Last M&R	Last Paved
2024	729014	63	ALLSTON WAY	MILVIA ST	SHATTUCK AVE	R	Heavy Rehab	\$ 228,800	4	N	0.14	19	11/1/1990	O -	MILL AND THIN OVERLAY
2024	729014	65	ALLSTON WAY	SHATTUCK AVE	OXFORD ST	R	Reconstruct	\$ 344,036	4	N	0.11	10	11/1/1992	O -	MILL AND OVERLAY W/FABRIC
2024	729104	63	CHANNING WAY	MILVIA ST	SHATTUCK AVE	R	Heavy Rehab	\$ 267,640	4	2A to 2B*	0.13	27	9/1/1991	O -	MILL AND OVERLAY W/FABRIC
2024	829104	60	CHANNING WAY	MARTIN LUTHER KING	MILVIA ST	R	Reconstruct	\$ 462,920	4	2A to 2B*	0.13	10	5/1/1995	O -	THIN AC OVERLAY(1.5 INCHES)
2024	322142	48	DELAWARE ST	ACTON ST	SACRAMENTO ST	C	Heavy Mtce	\$ 78,175	1	4*	0.13				
2024	636146	78	DERBY ST	HILLEGASS AVE	COLLEGE AVE	R	Reconstruct	\$ 498,560	8	3E*	0.14				
2024	627155	85	DWIGHT WAY	HILLSIDE AVE	DEAD END ABOVE	R	Reconstruct	\$ 406,204	8	N	0.11	0	9/1/1993	A - AC	RECONSTRUCT SURFACE (AC)
2024	627155	83	DWIGHT WAY	PIEDMONT AVE	HILLSIDE AVE	R	Reconstruct	\$ 526,688	7, 8	N	0.14	3	9/1/1993	O -	MILL AND OVERLAY W/FABRIC
2024	111249	17	GRIZZLY PEAK BLVD	KEELER AVE	MARIN AVE	C	Reconstruct	\$ 843,578	6	3C*	0.27				
2024	920275	40	HEINZ AVE	7TH ST	SAN PABLO AVE	R	Reconstruct	\$ 897,408	2	3E	0.26				
2024	739285	70	HILLEGASS AVE	ASHBY AVE	CITY LIMIT (WOOLSEY)	R	Light Mtce	\$ 68,400	8	3E	0.16	83	7/28/2003	A - AC	RECONSTRUCT STRUCTURE (AC)
2024	736285	60	HILLEGASS AVE	DWIGHT WAY	ASHBY AVE	R	Light Mtce	\$ 256,000	8	3E	0.61	83	5/31/2000	A - AC	RECONSTRUCT STRUCTURE (AC)
2024	213293	53	HOPKINS ST	MC GEE AVE	CARLOTTA AVE	C	Heavy Rehab	\$ 149,680	5	2A, C	0.06	47	12/1/1989		RECONSTRUCT STRUCTURE (AC)
2024	213293	55	HOPKINS ST	CARLOTTA AVE	JOSEPHINE ST	C	Heavy Rehab	\$ 874,580	5	2A, C	0.35	60	12/1/1989		MILL AND OVERLAY
2024			15% DISCRETIONARY					\$ 1,091,295							
								\$ 6,993,964			2.74				

Note: Column P denotes presence of bike facility type (1 paved path, 2A 2B bike lane, 3A sign-only, 3C Sharrows, 3E bike blvd, 4 cycle track); C for bus route; and N for none.

*Proposed bike facilities from 2017 Bike Plan.

FISCAL YEAR 2020 TOTALS

Total Estimated Cost and Miles

	MILEAGE
ARTERIALS	0.32
COLLECTORS	1.77
RESIDENTIALS	1.58
	3.67

	District	Miles	Cost	
\$ 6,265,814		3.67 miles		
	1	0.69	\$1,685,991	
	2	0.31	\$1,328,400	
	3	0.44	\$764,300	
	4	0.03	\$0	
	5	0.57	\$960,667	
	6	0.30	\$526,456	
	7	0.00	\$0	
	8	0.00	\$0	
	<u>Arterial/PRW</u>	1.33	\$1,000,000	
		3.67	\$6,265,814	6975303

FISCAL YEAR 2021 TOTALS

Total Estimated Cost and Miles		\$ 6,968,593	3.84 miles	
	MILEAGE	District	Miles	Cost
ARTERIALS	0.00	1	0.18	\$1,538,055
COLLECTORS	0.51	2	0.71	\$1,084,031
RESIDENTIALS	3.33	3	0.26	\$155,120
	3.84	4	0.39	\$1,052,125
		5	0.00	\$0
		6	1.54	\$737,394
		7	0.76	\$1,355,572
		8	0.00	\$0
		15%		\$1,046,295
<hr/>			3.84	\$6,968,592
				6975303

FISCAL YEAR 2022 TOTALS

Total Estimated Cost and Miles

	MILEAGE
ARTERIALS	0.41
COLLECTORS	0.23
RESIDENTIALS	2.39
	3.03

	District	Miles	Cost	
	1	0.00	\$0	
	2	0.50	\$911,600	
	3	0.80	\$748,867	
	4	0.23	\$956,235	
	5	0.00	\$0	
	6	0.00	\$0	
	7	1.09	\$1,335,760	
	8	0.00	\$0	
	<u>Arterial</u>	0.41	\$896,480	
	15%		\$1,046,295	
		3.03	\$5,895,237	6975303

FISCAL YEAR 2023 TOTALS

Total Estimated Cost and Miles		\$ 5,711,469	2.83 miles	
	MILEAGE	District	Miles	Cost
ARTERIALS	0.04	1	0.50	\$626,949
COLLECTORS	0.62	2	0.00	\$0
RESIDENTIALS	2.17	3	0.83	\$1,150,792
	2.83	4	0.22	\$637,614
		5	0.34	\$602,817
		6	0.30	\$470,167
		7	0.25	\$454,080
		8	0.36	\$600,000
		Arterial	0.04	\$77,755
		15%		\$1,091,295
<hr/>			2.83	\$5,711,469
				7275303

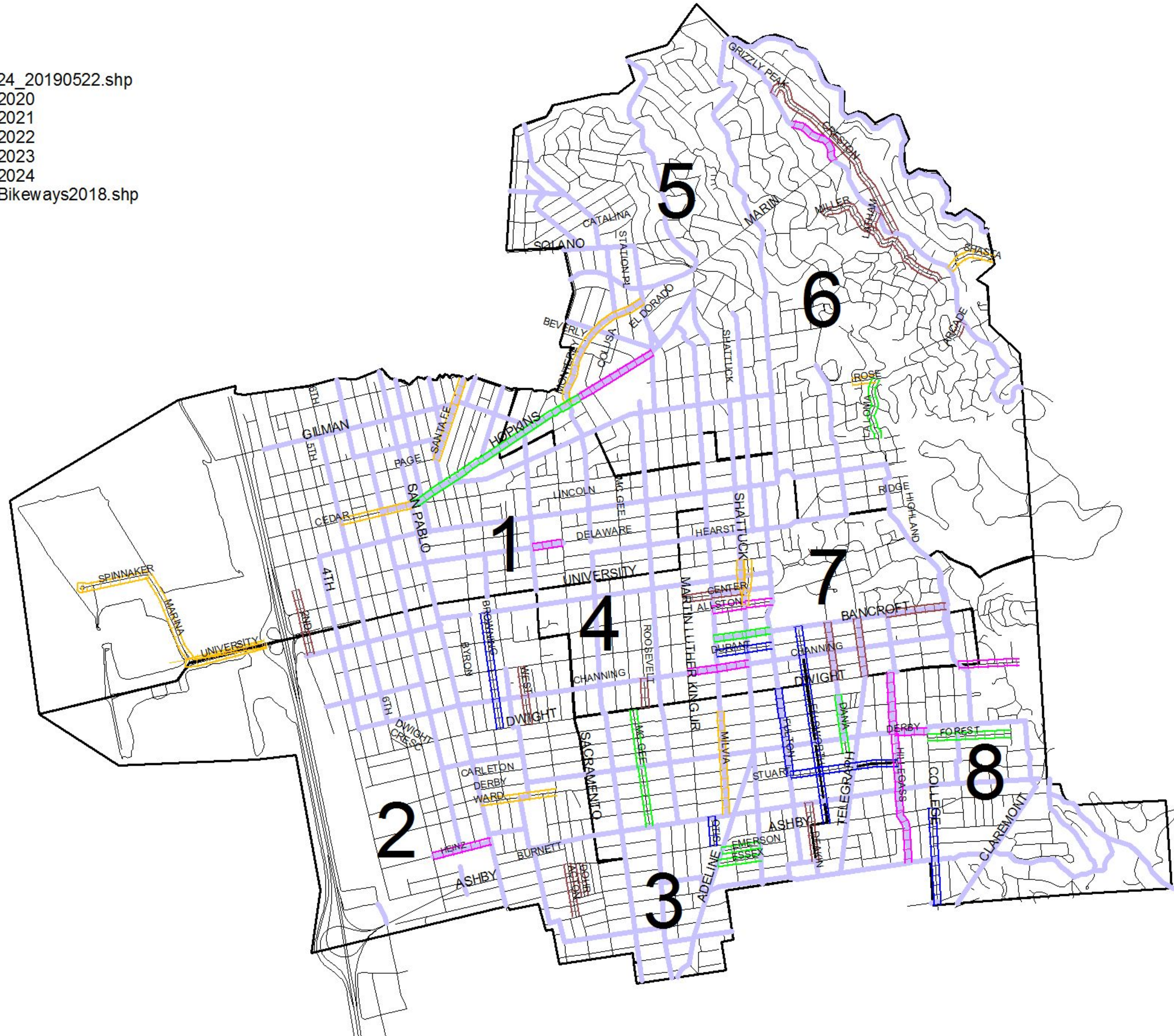
FISCAL YEAR 2024 TOTALS

Total Estimated Cost and Miles

	MILEAGE
ARTERIALS	0.00
COLLECTORS	0.81
RESIDENTIALS	1.93
	2.74

	District	Miles	Cost	
\$ 6,993,964		2.74 miles		
	1	0.13	\$78,175	
	2	0.26	\$897,408	
	3	0.00	\$0	
	4	0.51	\$1,303,396	
	5	0.41	\$1,024,260	
	6	0.27	\$843,578	
	7	0.00	\$0	
	8	1.16	\$1,755,852	
	Arterial	0.00	\$0	
	15%		\$1,091,295	
		2.74	\$6,993,964	7275303

- 5vr1924_20190522.shp
- 2020
- 2021
- 2022
- 2023
- 2024
- Bikeways2018.shp



5-Year Paving Plan Process Flow Diagram

