



MEMORANDUM

Public Works Department

DATE: April 9, 2024

TO: City Council

FROM: Edward Arango, Acting Public Works Director

VIA: Kimbra McCarthy, City Manager

SUBJECT: Pavement Management Program Update

PURPOSE

On June 26, 2023, staff provided Council a memo regarding the Pavement Management Program Status and Funding. This memo provides an update on the current pavement condition, in process and planned paving projects already funded in the CIP, and an updated evaluation of future funding needs.

BACKGROUND

The City coordinates with the Metropolitan Transportation Commission (MTC) to evaluate the overall condition of the City's street network and develop a rehabilitation and maintenance strategy that will improve the overall condition of the street network. The City's street network is typically evaluated biennially by an MTC assigned consultant who provides a Pavement Management Plan (PMP) report with a network Pavement Condition Index (PCI) rating. The PCI is a measurement of pavement condition that ranges from zero to 100. A newly constructed or overlaid street would have a PCI of 100, while a poor/failed roadway (requiring major rehabilitation or reconstruction) would have a PCI under 49 (see Table 1).

Table 1—Pavement Condition Categories

Very Good—Excellent PCI = 80-100	Newly constructed for resurfaced pavement with few signs of distress.
Good PCI=70-79	Pavement requiring mostly preventive maintenance and showing only low levels of distress.
Fair PCI=60-69	Pavement at the low end of this range is significantly distressed and may require a combination of rehabilitation and preventive maintenance.

At Risk PCI=50-59	Deteriorated pavement requiring immediate attention, including rehabilitative work.
Poor PCI=25-49	Pavement showing extensive distress and requiring major rehabilitation or reconstruction.
Failed PCI=24	Extremely rough pavement that needs complete reconstruction.

The MTC and the Santa Clara Valley Transportation Authority (VTA) expect cities to strive for a minimum network PCI of 70, representing a good condition. Below 70, it becomes exponentially more expensive to repair and maintain pavement. The most cost-effective way to maintain a good pavement condition is to avoid deferred maintenance and invest in preventive maintenance and pavement preservation.

The MTC's PMP report published in 2022 identified the City's PCI at 72 in 2021. In 2023, the MTC published the 2022 report of the rolling three-year average PCI for all Bay Area jurisdictions, showing Mountain View's three-year average at 70 (Exhibit A). The City's goal has been to maintain a Citywide network PCI above 75. This spring, staff expects MTC to publish the 2023 report of the rolling three-year average. More information about the City's PCI and maintenance strategies can be found on the City's website at [Roadway Pavement | Mountain View, CA](#).

DISCUSSION

The MTC's biennial pavement evaluation began with the MTC's consultant conducting field reviews of the City's pavement condition in fall 2023. The MTC has provided a draft PMP report with the City's updated network PCI rating of 67. As previously noted to Council in June 2023, while staff did anticipate a decline to the City's PCI, this decline of the PCI by five points over three years is more than staff expected. Staff has identified the following factors that have contributed to the rating:

- During 2020 to 2022, the Engineering Division of the Public Works Department had significant staffing challenges, particularly in the Civil Infrastructure Section that manages the pavement program.
- The staffing challenges required staff to prioritize capital projects with grant funding or other critical deadlines, creating a backlog and delayed delivery of road pavement projects for two years.
- During the backlog, the pavement condition continued to decline without paving projects constructed to stabilize the City's overall PCI rating.

Funded Pavement Projects

Staff has been aggressively addressing the backlog of projects by assigning paving projects to multiple project managers as well as combining similar paving projects from multiple years into one project. This effort is to speed up the project delivery. Tables 2, 3, 4, and 5 provide a detailed summary of the pavement projects and their current status.

In Table 2, the paving phase of Projects 19-48 and 21-01 are substantially complete, and Project 21-30 will be completed this spring.

Table 2—Pavement Projects Constructed or Nearing Construction Completion

Project No.	Category	Streets	Funding (millions)
IN CONSTRUCTION			
19-48	Street Reconstruction	Park Avenue and Sonia Way	\$3.27
21-01	Annual Street Maintenance	Leong Drive and Fairchild Drive	3.78
21-30	SB 1 Streets	Various neighborhood streets (including 100 to 300 Castro Street)	1.30
TOTAL			\$8.35

Projects 20-01 and 21-40, listed in Table 3, are both anticipated to begin construction in 2024.

Table 3—Pavement Projects Starting Construction in 2024

Project No.	Category	Streets	Funding (millions)
STARTING CONSTRUCTION			
20-01	Annual Street Maintenance	Miramonte Avenue, Cuesta Drive to Castro Street	\$3.40
21-40	California Complete Street Pilot	California Street, Showers Drive to Shoreline Boulevard	1.76
TOTAL			\$5.16

Table 4 lists the five projects in design. To catch up with the workload, staff combined several similar projects for efficiency. Projects 22-01 and 24-03 include grant funding. Design schedules range from nine to 18 months, allowing construction to start in 2025.

Table 4—Pavement Projects In Design

Project No.	Category	Streets	Funding (millions)
IN DESIGN			
21-41, 22-31	Annual Street Maintenance	Crittenden Lane and North Shoreline Boulevard	\$2.27
22-01	Annual Street Maintenance	Middlefield Road Complete Street	5.29
22-03, 23-03	SB 1 Streets	Various neighborhood streets	4.73
23-01, 24-01	Annual Street Maintenance	Various neighborhood streets	4.68
24-03	SB 1 Streets	Moffett Boulevard Complete Streets	5.15
TOTAL			\$22.12

Lastly, Table 5 lists the next set of projects, anticipated to start design within the next nine months. Staff expects to again be combining several similar projects listed to fully catch up with the backlog.

Table 5—Pavement Projects Not Yet Started

Project No.	Category	Streets	Funding (millions)
NOT YET STARTED			
23-31	Street Reconstruction	Miramonte Avenue: Castro Street to El Camino Real	\$1.16
24-28	Street Reconstruction	Various neighborhood streets	1.00
25-01	Annual Street Maintenance	Various neighborhood streets	2.10
25-03	SB 1 Streets	Various neighborhood streets	2.00
25-xx	Street Reconstruction	Various neighborhood streets	1.00
TOTAL			\$7.26

In total, the City has accumulated \$34.54 million (Tables 3, 4, and 5 combined) from various funding sources for paving projects. Staff will be delivering \$27.28 million (Tables 3 and 4 combined) in pavement projects by 2025. **This continues to be a high volume of projects, and additional funding this year would not likely result in delivering more pavement projects due to workload constraints.**

Pavement Funding Analysis

The pavement program currently receives an annual allocation of approximately \$5.8 million from various pavement fund sources, including the Gas Tax, 2010 Measure B Vehicle License Fee,

2016 Measure B Sales Tax, and SB 1. Often times, supplemental funding is provided by the Construction/Conveyance Tax (C/C Tax) and CIP Reserve funds, though these two sources have experienced significant decline due to the pandemic, new hybrid remote work trends, and current economic conditions. As shown in Figure 3, at current baseline funding levels of approximately \$5.8 million per year, the PCI will continue to slowly decline. While the paving projects planned for construction in 2024 and 2025 may increase PCI, staff expects it will be offset due to the delay in full implementation for almost two years as the pavement continues to degrade.

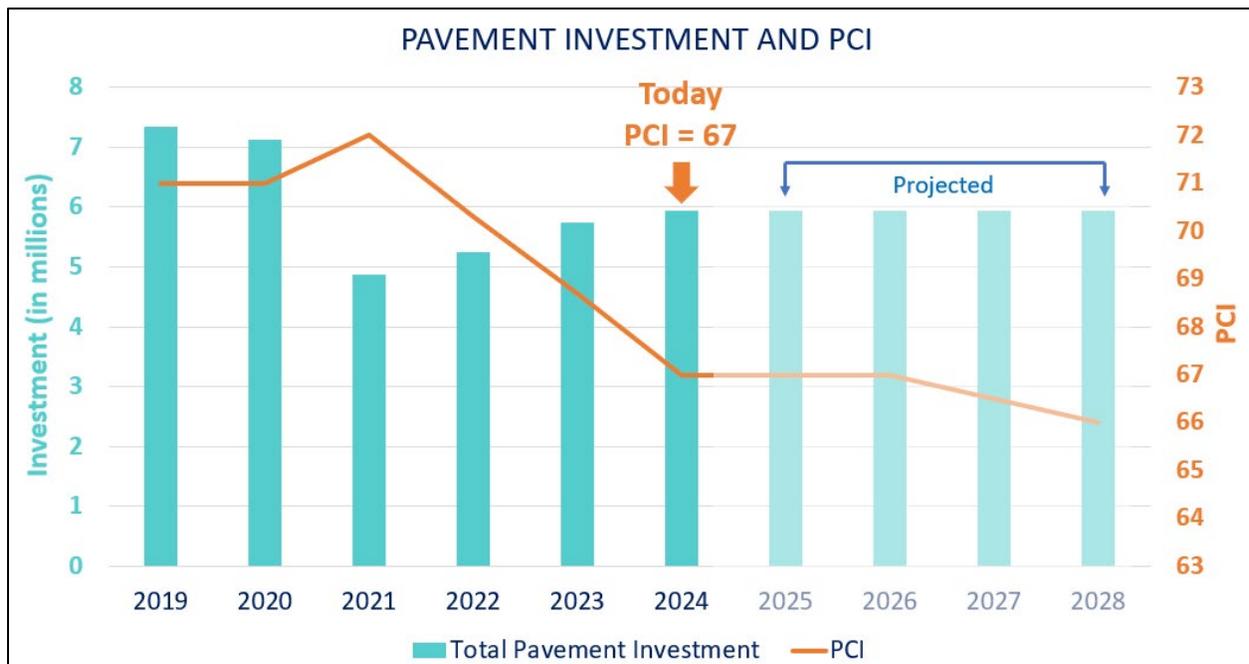


Figure 1: Pavement Investment and PCI Status

Staff evaluated the program funding needs to maintain the network PCI at the current level as well as needs to increase the network PCI by five points, using the latest financial information from the draft 2024 PMP report and escalating costs due to inflation. To maintain PCI levels, there will be a need to increase baseline funding levels to avoid further decline. Approximately \$8 million is needed per year (an increase of \$2.2 million per year over current baseline funding) to maintain the PCI and \$14 million per year for five years (an increase of \$8.2 million per year over current baseline funding) to increase the PCI by five points (see Figure 2).

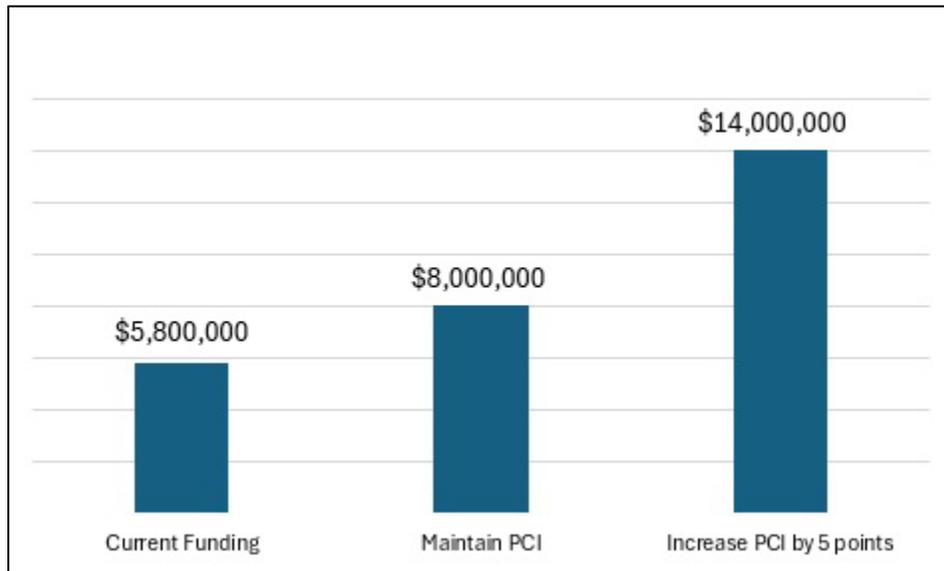


Figure 2: Annual Funding Needs for Pavement Maintenance

NEXT STEPS

Staff sees a need for an increased investment in the pavement infrastructure. Staff recommends continuing to prioritize pavement projects, aiming to maintain and improve the network PCI toward our goal of a Citywide average of 75. Considering the revenue decline from several funding sources and the magnitude of the pavement program funding needs, staff anticipates that this will require a new revenue source and/or moving CIP Reserve and C/C Tax funds away from discretionary projects, such as City buildings/facilities and bicycle/pedestrian improvement projects, and into pavement maintenance. A potential revenue measure is currently under consideration and staff will be bringing more information on this measure to Council this spring.

EA/LL/1/PWK
932-04-09-24M

Exhibit: A. Pavement Condition of Bay Area Jurisdictions 2022

cc: PWD(A)—Arango, PCE—Gonzales, SCE—Houghton

Pavement Condition of Bay Area Jurisdictions 2022

Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2022

Very Good (PCI = 80–89)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Orinda	Contra Costa	190.7	75	81	84
Cupertino	Santa Clara	297.7	84	85	83
Palo Alto	Santa Clara	414.4	84	84	83
Brentwood	Contra Costa	425.9	82	81	80
Dublin	Alameda	349.2	85	84	80
Solano County	Solano	931.0	81	80	80

Good (PCI = 70–79)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Danville	Contra Costa	324.0	80	80	79
Los Altos Hills	Santa Clara	124.4	80	79	79
Hillsborough	San Mateo	166.4	80	78	79
Livermore	Alameda	733.7	79	79	78
Foster City	San Mateo	120.1	81	80	78
San Ramon	Contra Costa	508.2	78	78	78
Clayton	Contra Costa	94.2	82	81	78
Menlo Park	San Mateo	196.6	77	79	78
Pleasanton	Alameda	515.0	79	78	78
Yountville	Napa	16.4	74	74	78
Ross	Marin	21.3	78	77	77
Burlingame	San Mateo	170.8	78	79	77
Daly City	San Mateo	256.8	82	79	77
Portola Valley	San Mateo	70.9	78	77	77
Sunnyvale	Santa Clara	639.2	76	76	77
Emeryville	Alameda	47.4	74	74	76

(Continued...)

Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2022 (continued)

Good (PCI = 70–79)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Woodside	San Mateo	96.9	81	81	76
Colma	San Mateo	26.9	79	78	76
Larkspur	Marin	65.8	52	59	75
Atherton	San Mateo	105.4	76	75	75
Windsor	Sonoma	173.1	77	76	75
Lafayette	Contra Costa	199.3	76	75	75
San Francisco	San Francisco	2148.3	74	74	74
San Mateo County	San Mateo	629.0	73	74	74
Tiburon	Marin	67.7	76	77	74
Santa Clara	Santa Clara	609.0	75	75	74
Brisbane	San Mateo	67.9	77	76	74
Union City	Alameda	329.9	78	77	73
Morgan Hill	Santa Clara	302.4	72	73	73
Mill Valley	Marin	116.0	68	73	73
South San Francisco	San Mateo	294.9	75	73	73
Oakley	Contra Costa	293.2	77	76	73
Moraga	Contra Costa	113.4	72	74	73
Newark	Alameda	256.0	75	74	72
Vacaville	Solano	696.3	69	70	72
Alameda County	Alameda	993.1	71	72	72
Walnut Creek	Contra Costa	398.8	73	73	72
Fremont	Alameda	1094.2	73	73	72
Monte Sereno	Santa Clara	31.3	65	68	71
Redwood City	San Mateo	359.3	75	73	70
Belvedere	Marin	23.4	73	71	70
El Cerrito	Contra Costa	137.0	80	76	70
Contra Costa County	Contra Costa	1337.8	72	71	70

(Continued...)

Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2022 (continued)

Good (PCI = 70–79)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Los Gatos	Santa Clara	239.0	68	69	70
Milpitas	Santa Clara	308.4	75	73	70
Mountain View	Santa Clara	332.8	73	73	70
San Mateo	San Mateo	428.2	75	73	70

Fair (PCI = 60–69)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
San Pablo	Contra Costa	104.2	72	71	69
Hayward	Alameda	681.4	70	70	69
Campbell	Santa Clara	218.4	69	70	69
San Jose	Santa Clara	4468.3	66	66	69
Pleasant Hill	Contra Costa	225.4	67	67	69
Sonoma	Sonoma	68.3	73	71	69
Los Altos	Santa Clara	227.1	69	68	69
Healdsburg	Sonoma	96.9	61	63	68
San Anselmo	Marin	81.4	66	68	68
Half Moon Bay	San Mateo	55.4	60	66	67
Rohnert Park	Sonoma	228.4	67	68	67
Alameda	Alameda	308.5	70	70	67
Martinez	Contra Costa	233.0	63	64	67
Saratoga	Santa Clara	283.5	68	67	67
Corte Madera	Marin	72.0	67	66	66
Marin County	Marin	851.8	66	65	66
Fairfield	Solano	793.0	72	69	66
Novato	Marin	319.8	69	68	66
Hercules	Contra Costa	124.6	67	67	65

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Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2022 (continued)

Fair (PCI = 60–69)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Napa	Napa	498.7	71	69	65
Belmont	San Mateo	139.2	57	60	65
Cotati	Sonoma	49.7	56	59	65
Antioch	Contra Costa	683.2	68	66	64
Santa Clara County	Santa Clara	1424.3	66	66	64
Dixon	Solano	158.4	65	64	64
San Rafael	Marin	332.2	65	65	63
Piedmont	Alameda	78.4	64	64	63
San Bruno	San Mateo	180.7	61	62	62
Santa Rosa	Sonoma	1136.0	60	62	62
Pittsburg	Contra Costa	343.9	62	61	60
Rio Vista	Solano	54.7	63	59	60
American Canyon	Napa	113.4	63	62	60
East Palo Alto	San Mateo	82.7	65	62	60
Richmond	Contra Costa	583.4	64	63	60
Calistoga	Napa	30.6	59	61	60

At Risk (PCI = 50–59)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Gilroy	Santa Clara	271.8	65	62	59
Sausalito	Marin	57.6	63	62	59
San Carlos	San Mateo	179.3	62	61	58
Albany	Alameda	62.9	57	56	57
Concord	Contra Costa	716.9	60	59	56
Berkeley	Alameda	449.6	57	58	56
Pinole	Contra Costa	118.6	62	59	56

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Pavement Condition Index (PCI) for Bay Area Jurisdictions, 2022 (continued)

At Risk (PCI = 50–59)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
Cloverdale	Sonoma	65.1	58	56	55
Suisun City	Solano	153.6	61	59	55
Millbrae	San Mateo	112.6	53	56	55
Fairfax	Marin	54.7	60	58	55
San Leandro	Alameda	393.8	57	55	55
Oakland	Alameda	2051.8	53	52	54
Benicia	Solano	198.0	53	51	52
Sonoma County	Sonoma	2691.7	49	50	52

Poor (PCI = 0–49)

Jurisdiction	County	Total Lane Miles	3-YEAR MOVING AVERAGE		
			2020	2021	2022
St Helena	Napa	51.4	57	54	49
Sebastopol	Sonoma	47.5	51	48	48
Vallejo	Solano	737.3	52	49	46
Napa County	Napa	820.2	48	45	45
Petaluma	Sonoma	391.8	45	44	44
Pacifica	San Mateo	189.1	43	42	43
Bay Area	–	44034	67	67	67

Aggregate City and County PCI for Bay Area Counties, 2022

Good (PCI = 70–79)

Jurisdiction	Total Lane Miles	3-YEAR MOVING AVERAGE		
		2020	2021	2022
San Francisco County	2148	74	74	74
San Mateo County	3929	71	70	70
Santa Clara County	10192	70	70	70

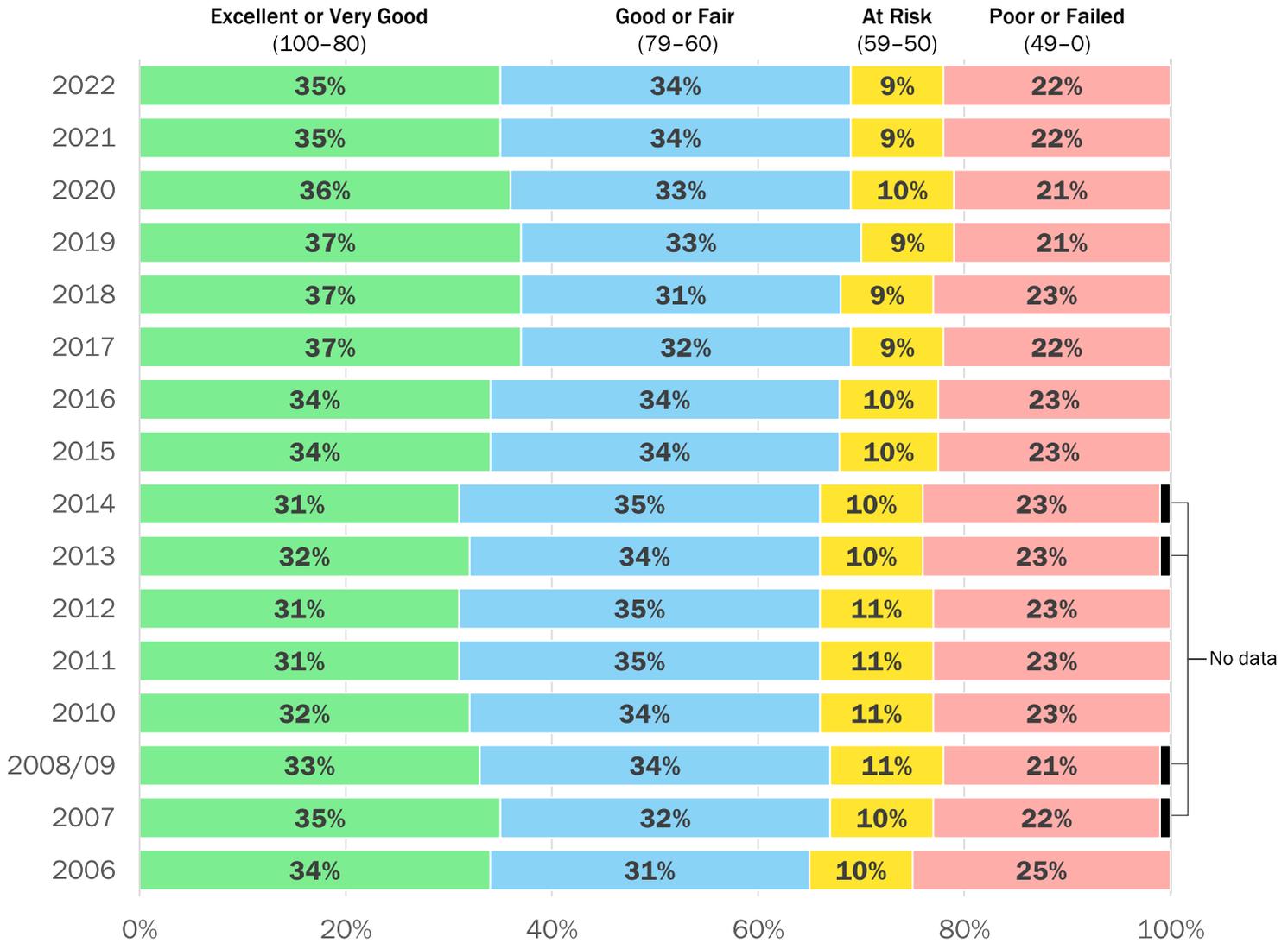
Fair (PCI = 60–69)

Jurisdiction	Total Lane Miles	3-YEAR MOVING AVERAGE		
		2020	2021	2022
Contra Costa County	7156	70	69	68
Alameda County	8345	68	67	67
Marin County	2064	66	66	66
Solano County	3722	68	66	65

At Risk (PCI = 50–59)

Jurisdiction	Total Lane Miles	3-YEAR MOVING AVERAGE		
		2020	2021	2022
Sonoma County	4948	55	55	56
Napa County	1531	56	55	54
Bay Area	44034	67	67	67

Figure 1: Year-Over-Year Comparison of Pavement Conditions for Local Roadways 2006–2022 (Lane Miles)



Regional Weighted Network PCI (Year over Year)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Weighted PCI	66	66	66	66	67	67	67	67	67	67	67	67