



PUBLIC WORKS DEPARTMENT

CITY HALL

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CITY COUNCIL STAFF REPORT

Meeting: May 7, 2019

Subject

Annual Report on the Pavement Management Program.

Recommended Action

Receive the report. No action is required.

Discussion

Cupertino's street network is over 138 miles in length and covers approximately 26 million square feet (8% of the total area of the City). The network is an essential asset to businesses, residents and visitors and is among the most valuable assets maintained by the City.

A properly designed asphalt street will typically last 20 years without the need of total reconstruction. However if some conditions change, such as more and/or heavier traffic, then reconstruction may be needed sooner. Extending the life of pavement, as opposed to the replacement of pavement, is the goal of the pavement management program (program). Over the last six years substantial funding and effort has been provided to the program that had been in decline during the years of the recession. These program resources are extending the life and improving the condition of Cupertino's street network, while also saving the City millions of dollars into the future.

To support the goal of preservation, a dependable infrastructure performance measure of a pavement condition index (PCI) equal to or greater than 82 has been established. Achieving this goal is important as more money is spent on preservation rather than rehabilitation, and consequently, costs to maintain are lower and it is easier to maintain that level. Ranges of PCI values and street conditions are included in Attachment A.

The Metropolitan Transportation Commission (MTC) monitors and reports on the condition of pavement in the Bay Area in their Regional Pavement Condition Summary Report (report). The PCI for Cupertino's street network and the PCI for over 100 Bay Area agencies is updated annually in this report and staff anticipates that the report will show that the 2018 PCI of Cupertino's street network will be an 85 and that the 3-year

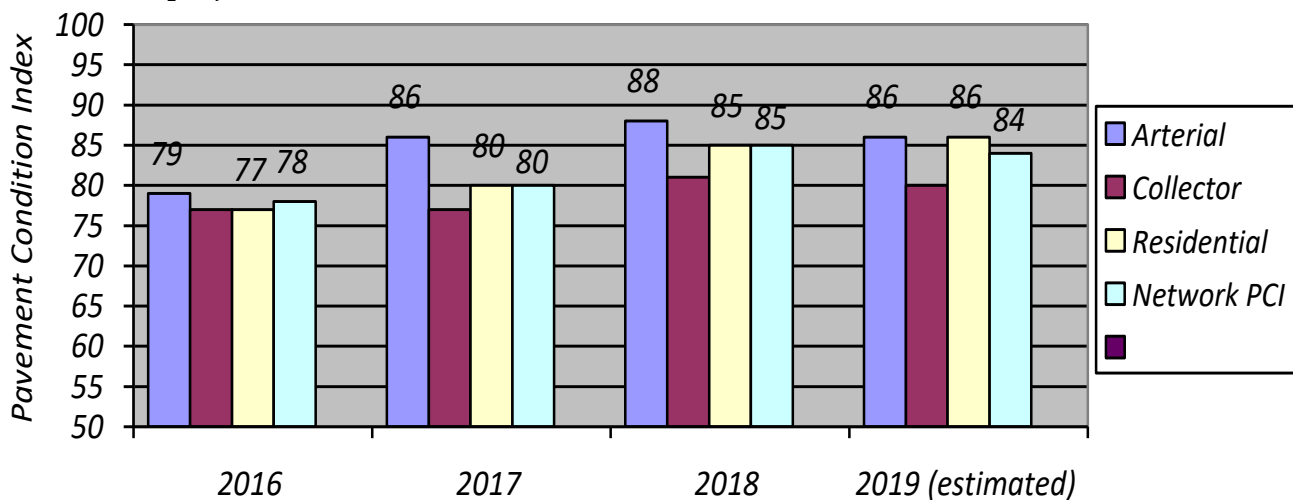
moving average will be an 81. Note that the 2018 PCI value is most relevant as it represents the condition of the street network. The 3-year moving average method smooths high and low PCI values. With the Cupertino street network being improved steadily over the last several years, the 3-year average will lag in its representation of the City's street network condition.

Most street networks, including the Cupertino street network, degrade approximately 2 PCI points annually due to weather and wear/ tear from vehicles. Improvements to a street network can either offset this amount or, as has been the practice in Cupertino over the last several years, improvements have exceeded the aging process and the overall condition of the street network has been improved.

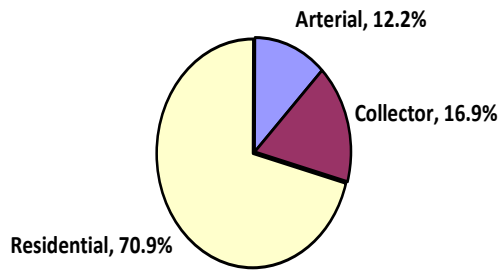
The below table shows the Cupertino street network PCI values for years 2016-18. For reference, the 3-year MTC moving average is included.

	2016	2017	2018
Annual PCI	78	80	85
3-year Moving Average PCI	72	76	81

The following table shows the PCI values for arterial, collector and residential streets for the last three years plus the 2019 PCI values that are anticipated upon completion of all scheduled projects this summer.



The street network PCI is calculated by weighting the areas of arterial, collector and residential streets to the total combined area. The below pie chart represents the percent of total network area by arterial, collector and residential streets.



Residential streets represent the largest portion at over 70% of the total area. With residential streets having the largest area, their PCI value has the greatest contribution to the cumulative street network PCI. The pavement maintenance program in 2015 and 2016 focused on residential streets. In 2017 and 2018 both residential and arterial streets were improved. For the 2019 program residential and collector streets will be improved.

Budget Options Report

The MTC StreetSaver program provides the ability to run various budget scenarios. Based on a series of assumptions, StreetSaver allocates available funds across the street network, recommends improvements, and forecasts future PCI if recommendations are implemented. Staff routinely updates values in StreetSaver in order to update current costs with the type of pavement treatment recommended at various PCI values.

StreetSaver predicts that the Cupertino street network will maintain a PCI of 84 through 2023 and for several years to follow under the following budget scenario:

FY 19/20	FY20/21	FY21/22	FY22/23
\$3M	\$3M	\$3M	\$3M

2019 Pavement Management Project

The 2019 Pavement Maintenance Project - Phase I overlay project opened bids in January and is scheduled to start near the week of June 10th. The 2019 Pavement Maintenance Project - Phase II micro-surfacing project is currently out to bid and is expected to begin in the fall. A street-by-street listing of the Phase 1 & Phase 2 projects is included in Attachment B and can be viewed online at <https://www.cupertino.org/home/showdocument?id=24181>. Current PCI values for all streets can be viewed online at <https://www.cupertino.org/home/showdocument?id=24183>. Streets completed in last year's FY17/18 projects are included as Attachment C.

Note that the street-by-street listing in Attachment B may be modified as unforeseen conditions arise.

Sustainability Impact

Timely maintenance of the street network conserves valuable resources as compared to the consumption of additional resources that are required when maintenance is not performed and street reconstruction is required. Well maintained streets conserve the consumption of motorist fuels and help to reduce noise pollution.

Fiscal Impact

The Road Repair and Accountability Act of 2017 (SB1) will provide funding of approximately \$1.0M in FY19/20 and then \$1.1M annually for the next ten years. These amounts will augment the approximate \$0.36M and \$1.0M annual amounts currently received from the State for Cupertino's share of vehicle license fees and gas tax receipts, respectively. Due to the good condition of the street network, the City has flexibility to allocate future SB 1 funds to other types of projects such as bicycle and/or pedestrian improvements.

\$1.13M in Measure B funds are also received annually. These funds can be used to enhance local street and road maintenance, transit, and bicycle and pedestrian facilities.

For FY19/20, it will be recommended that SB1, vehicle license fees and gas tax receipt funds be used to improve the street network and Measure B funds be used for bicycle and pedestrian improvements.

Funding for the 2019 Pavement Management program was approved in the FY18/19 operating budget. No additional funding is required.

Prepared by: JoAnne Johnson, Public Works Project Manager

Reviewed by: Roger Lee, Acting Director of Public Works

Approved for Submission by: Timm Borden, Interim City Manager

Attachments:

A – Description of pavement condition range categories and street-by street pavement condition index table

B – Street-by-street listing of improvements to be completed by the 2019 Pavement Maintenance Phase 1 & Phase 2 Projects

C – Street-by-street listing of improvements completed by the FY18/19 Pavement Management Projects