CITY OF SALINAS
COUNCIL STAFF REPORT

DATE:	**FEBRUARY 20, 2024**
DEPARTMENT:	**PUBLIC WORKS**
FROM:	**DAVID JACOBS, PE, PLS, DIRECTOR**
BY:	**ADRIANA ROBLES, PE, CFM, CITY ENGINEER**
TITLE:	**PAVEMENT MANAGEMENT AND STREET SELECTION POLICY**

RECOMMENDED MOTION:

A motion to approve a Resolution approving the Pavement Management and Street Selection Policy.

EXECUTIVE SUMMARY:

The city maintains approximately 292 miles of roadway pavement. Establishing a Pavement Management and Street Selection Policy is crucial to equitably distributing funds based on roadway condition and usage. By allocating most of the funding to Major Streets, available funds can be used more effectively on roadways used by most users including residents, businesses and visitors. Following a two-phase process for Residential Street prioritization will provide an equalization and balanced distribution of available pavement improvement funds to better address pavement needs.

BACKGROUND:

On August 18, 2020, the City Council approved a contract with Pavement Engineering Inc (PEI) for pavement condition surveys, updates to the Street Saver Pavement Management Program (PMP) database, and pavement conditions reports (Resolution No. 21932) of the 292 centerline miles of roadway pavement maintained by the city. Public Works Engineering staff utilized the Street Saver PMP for project-level pavement analysis for creation of the annual pavement Capital Improvement Projects (CIPs). The Street Saver PMP is also used as a budgeting and inventory tool, record keeping tool and pavement condition tracking tool.

In March 2021, PEI presented the findings of the PMP to City Council. The analysis from the PMP revealed that the replacement value of the city's roadways would be approximately $1.1 billion dollars and a backlog of deferred maintenance of $169 million. The PMP indicated an overall average pavement condition index (PCI) of 55. PEI conducted an update of the pavement conditions analysis in Spring and Summer of 2023. The 2023 Pavement Management System Update now sets the overall average PCI at 53 or "Fair" (Attachment 2). Table 1 provides the PCI ranges and condition category.
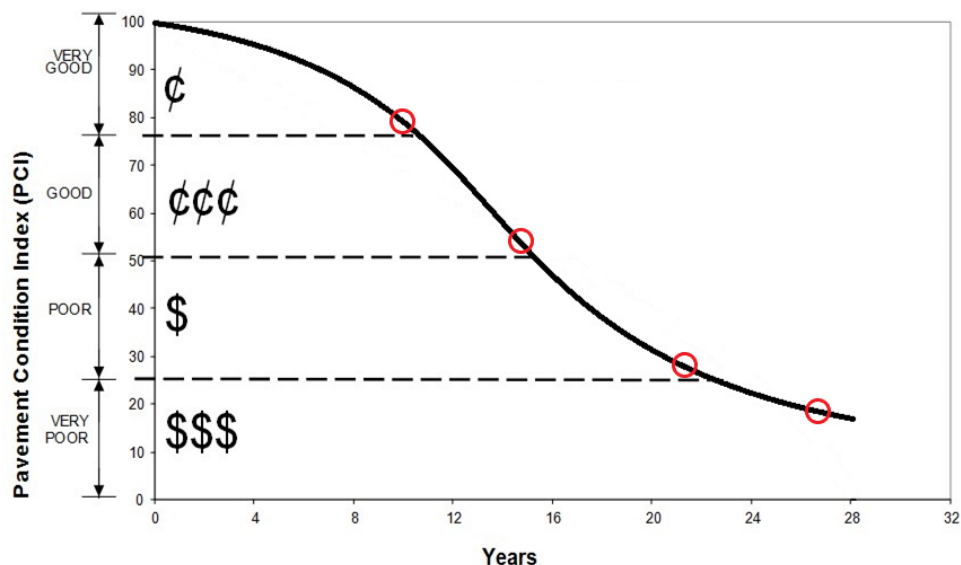
Table 1

Condition Category:	Failed	Poor	Fair	Good	Excellent
PCI Range:	0-30	31-50	51-70	71-90	91-100

Figure 1. Pavement Deterioration Curve
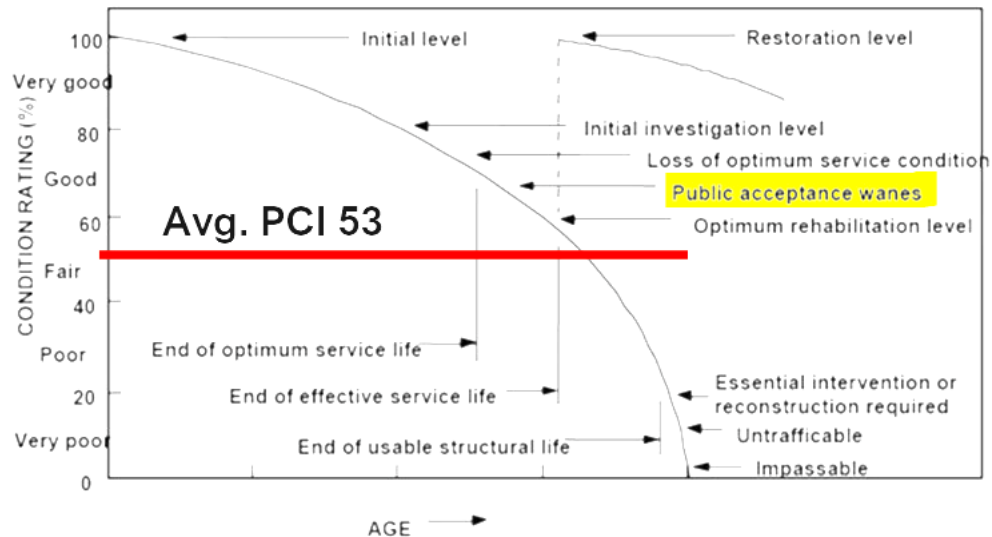
A typical pavement deterioration curve is shown below in Figure 1. Deterioration of pavement comes from age and use or fatigue. Vehicles circulating on roadways cause stress on the pavement. Over time this stress, compounded with environmental factors, maintenance, and the age of the pavement cause the pavement to begin to break apart, distort and unravel. Addressing pavement maintenance at the "critical point", the point before the roadway deteriorates and repairs become more costly, is key to managing pavement more effectively, see Figure 2.

Figure 2. Critical Point Management

Since the needs for roadway maintenance are so extensive and the funds limited, it is important for the City to establish a policy of how funding will be distributed to maximize the impact of the available funding. Establishing a Pavement Management and Street Selection Policy is a proactive approach to managing the pavement network. It sets forth the methods and processes for selection of streets and treatments.

Street Selection – Distribution of Funds

To maximum the impact of the available funding, the policy proposes to divide available pavement funding into three categories: Major Streets, Residential Streets and Stop Gap/Maintenance. Funding is proposed to be distributed with 60% of annual funding going to Major Streets, 30% to Residential Streets and 10% to Stop Gap/Maintenance efforts as shown in Figure 3.

Figure 3. Annual Pavement Funding Distribution

Focusing the majority of the pavement funding (60%) into the maintenance and improvements of Major Streets would allow for the greatest impact to be made on streets that have the highest vehicular use and network importance without entirely neglecting residential streets and providing emergency or stop gap type maintenance projects.

Street Selection – Major Streets

Major streets are comprised of all City arterial and collector streets. This category makes up approximately 43% of the entire city roadway network. These are the streets most heavily traveled throughout the city and used by residents, businesses, and visitors alike. Major streets form the backbone of the City roadway system. The street selection for Major Streets will be listed as a three-step process. Using the Street Saver program, staff will generate a PCI and Weighted Effectiveness Ratio (WER) for each Major Street segment. Street Saver performs a life-cycle cost analysis and assigns a WER to each street segment based on the next treatment cost and anticipated service life. Using Average Daily Traffic (ADT) data collected by the City, along with the PCI and WER, each Major Street will be given a Priority Score. The Major Streets Score Charts in Figure 4 define how the PCI Score, ADT Score and WER Score would determine the Major Street Priority Score and ultimately the priority list for Major Streets pavement projects. This method of scoring gives the highest score to the street segments that are most "at-risk" of deteriorating to a point where the right treatment is no longer a maintenance treatment, but instead a rehabilitation treatment, making the effort more costly.

Figure 4. Major Streets Score Charts

PCI Score

Pavement Condition Index

PCI		SCORE
from	to	
0	10	4
11	20	5
21	30	6
31	40	7
41	50	8
51	60	9
61	70	10
71	80	3
81	90	2
91	100	1

ADT Score

Average Daily Traffic

ADT		SCORE
from	to	
0	3,000	1
3,001	6,000	2
6,001	9,000	3
9,001	12,000	4
12,001	15,000	5
15,001	18,000	6
18,001	21,000	7
21,001	24,000	8
24,001	27,000	9
27,001	30,000	10

WER Score

Weighted Effectiveness Ratio

WER		SCORE
from	to	
0	8,600	1
8,601	17,200	2
17,201	25,800	3
25,801	34,400	4
34,401	43,000	5
43,001	51,600	6
51,601	60,200	7
60,201	68,800	8
68,801	77,400	9
77,401	86,000	10

Street Selection – Residential Streets[1]

Residential Streets make up approximately 55% of the city roadway network. The strategy for addressing pavement maintenance of Residential Streets is proposed as a two-phase approach in order to make distribution of funds more equitable.

Phase One is intended to be a short-term strategy that would equalize or level the PCIs of each council district, making the condition of Residential Streets in all council districts similar, if not equal, based on area of roadway. The weighed average PCI for each District is currently as follows:

District 1: 67.3   District 4: 44.7
District 2: 41.7   District 5: 39.9
District 3: 42.2   District 6: 58.5

Residential Streets in this phase will be prioritized by addressing the lowest weighted average PCI, currently District 5, based on the figures above. Residential Streets within this district would then be given a Priority Score based on the Residential Score Charts in Figure 5. This prioritization list, along with the weighted average PCI, would be reassessed annually until balancing of the weighted average PCI is achieved throughout all council districts.

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[1] Street Selection of Residential Streets does not include streets that are maintained by a Maintenance District. Currently, only the Monte Bella Maintenance District provides funding for roadway maintenance.

Figure 5. Residential Streets Score Charts – Phase One

Alternative PCI Score

Pavement Condition Index

Alternative PCI		SCORE
from	to	
0	10	10
11	20	9
21	30	8
31	40	7
41	50	6
51	60	5
61	70	4
71	80	3
81	90	2
91	100	1

WER Score

Weighted Effectiveness Ratio

WER		SCORE
from	to	
0	4,200	1
4,201	8,400	2
8,401	12,600	3
12,601	16,800	4
16,801	21,000	5
21,001	25,200	6
25,201	29,400	7
29,401	33,600	8
33,601	37,800	9
37,801	42,000	10

Phase Two of the Residential Streets selection strategy involves dividing available Residential Streets funds between the six council districts based on the percentage of pavement area within each district. Current percentage of pavement areas within each district are:

District 1: 11%   District 4: 14%
District 2: 12%   District 5: 13%
District 3: 28%   District 6: 22%

Residential streets would then be prioritized based on the PCI and WER, in Figure 6, to determine the Residential Streets Priority Score within each District.

Figure 6. Residential Streets Score Charts – Phase Two

PCI Score

Pavement Condition Index

PCI		SCORE
from	to	
0	10	4
11	20	5
21	30	6
31	40	7
41	50	8
51	60	9
61	70	10
71	80	3
81	90	2
91	100	1

WER Score

Weighted Effectiveness Ratio

WER		SCORE
from	to	
0	4,200	1
4,201	8,400	2
8,401	12,600	3
12,601	16,800	4
16,801	21,000	5
21,001	25,200	6
25,201	29,400	7
29,401	33,600	8
33,601	37,800	9
37,801	42,000	10

It is important to note that streets within maintenance districts that assess for pavement maintenance will be managed independently of the strategies identified given that funding within

these districts is guaranteed and available. The goal for pavement maintenance within maintenance districts is to always be "Excellent".

Stop Gap/Maintenance

The budget allocation for the Stop-Gap/Maintenance is intended to be used for streets that need immediate localized maintenance or repair outside of the prioritization list, as is the case with sinkholes or pothole repairs.

Discussion:

The strategies used to develop the Pavement Management and Street Selection Policy create an effective, unbiased and repeatable process for prioritizing streets for pavement maintenance. Establishing the policy allows funds to be allocated based on pavement maintenance needs from allocating the majority of funds to Major Streets to distributing funds to equalize PCIs in Residential Streets. The policy provides an equitable, systematic methodology for pavement maintenance.

CEQA CONSIDERATION:

Not a Project. The City of Salinas has determined that the proposed action is not a project as defined by the California Environmental Quality Act (CEQA) (CEQA Guidelines Section 15378). In addition, CEQA Guidelines Section 15061 includes the general rule that CEQA applies only to activities which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. Because the proposed action and this matter have no potential to cause any effect on the environment, or because it falls within a category of activities excluded as projects pursuant to CEQA Guidelines section 15378, this matter is not a project. Because the matter does not cause a direct or foreseeable indirect physical change on or in the environment, this matter is not a project. Any subsequent discretionary projects resulting from this action will be assessed for CEQA applicability.

STRATEGIC PLAN INITIATIVE:

The Pavement Management and Street Selection Policy addresses the City Council's Goals of Infrastructure and Environmental Sustainability and Effective and Culturally Responsive Government by creating a strategic plan that addresses improving the condition of roadways in an equitable and effective manner.

DEPARTMENTAL COORDINATION:

Departmental coordination will be required following approval of the Pavement Management and Street Selection Policy between the Public Works Department and the Finance Department to better assess any available funding that may be used for roadway maintenance.

FISCAL AND SUSTAINABILITY IMPACT:

Approval of the Pavement Management and Street Selection Policy has no fiscal impact. The policy establishes how available funds budgeted as part of the City's annual budget are distributed for pavement maintenance.

ATTACHMENTS:

Resolution

Attachment 1: Draft Pavement Management and Street Selection Policy

Attachment 2: City of Salinas 2023 Pavement Management Program Update, Draft Report