DRAFT

THE CITY OF SALINAS
Pavement Management and Street Selection Policy

A Pavement Management and Street Selection Policy is a proactive approach to managing a pavement network. A Street Selection Policy sets forth the methods and processes for how streets should be selected for Maintenance and Rehabilitation projects. A Prioritization Plan is the outcome of following the Street Selection Policy and specifies a priority list of street segments with an estimated treatment category and cost.

Pavement Management Principles

A Street Selection Policy should be based on correct pavement management principles consisting of doing the right thing to the right pavement at the right time (Federal Highway Administration). Doing the right thing at the right time results in lower pavement costs and improved overall pavement conditions.

When managing pavements, you can take three approaches: Best First, Worst First or Critical Point Management. A brief explanation of each approach is outlined below:

A Best First pavement management strategy focuses maintenance and rehabilitation on the best streets in the system.

A Worst First pavement management strategy focuses maintenance and rehabilitation on the worst streets in the system.

A Critical Point Management focuses maintenance and rehabilitation on streets above rather than below a critical PCI. This approach is the most economical in the long run.
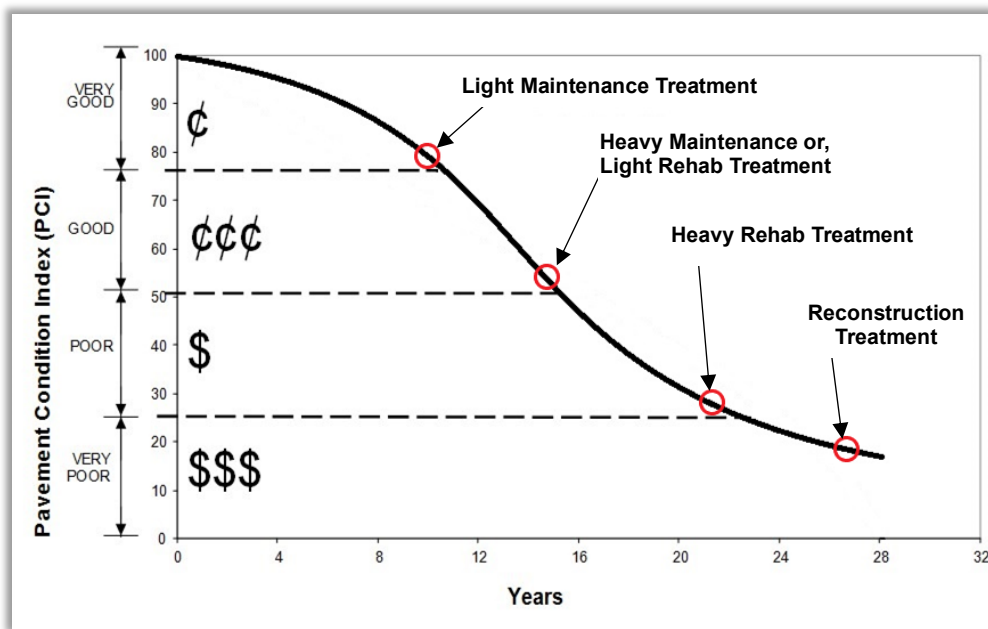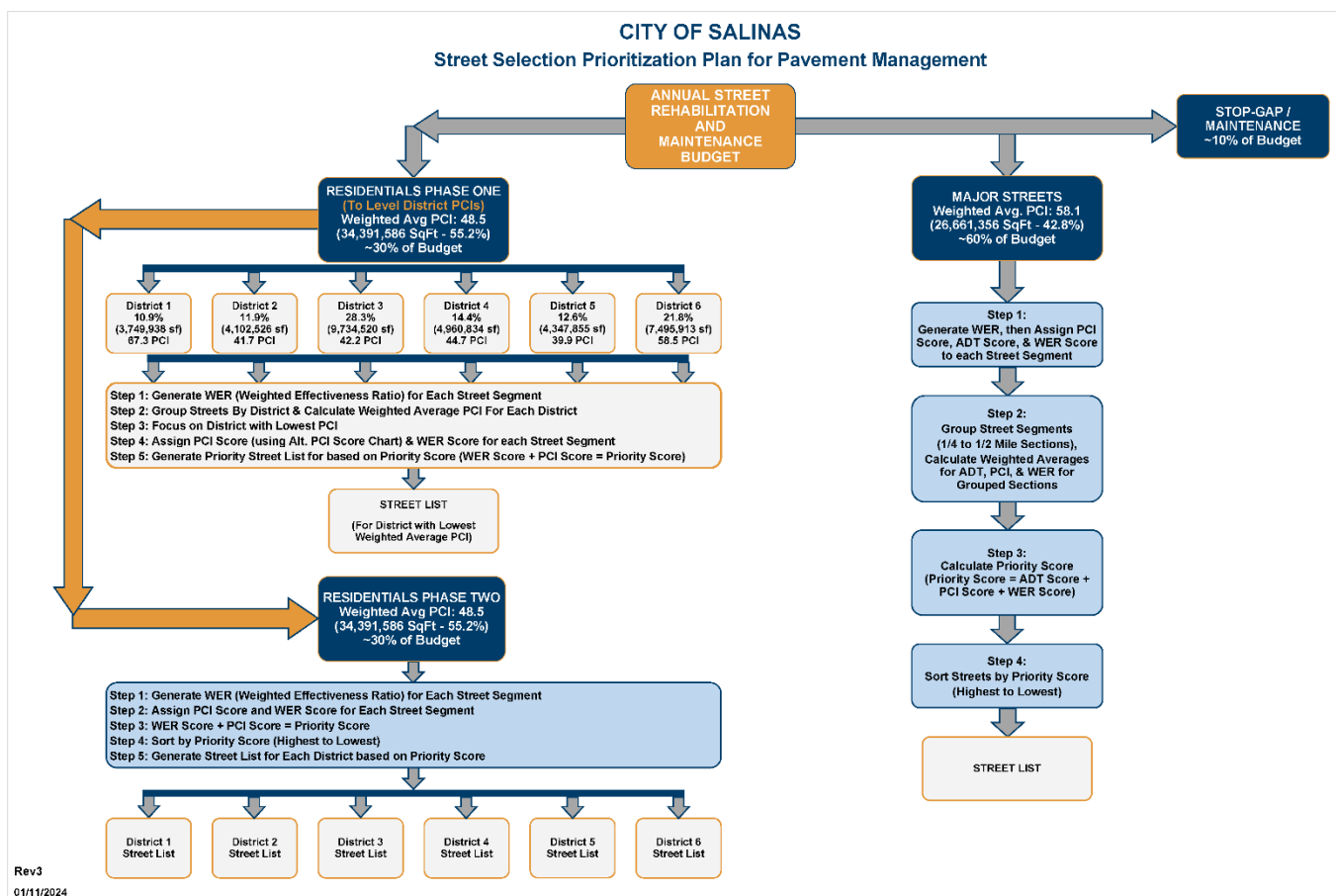
Street Selection Goals

❖ Preserve Investment in and continue to Improve Major Streets (60% of Annual Funding)
❖ Focus on Improving Residential Streets (30% of Annual Funding)
  ➢ Phase 1: Equalize Pavement Condition across City Council Districts
  ➢ Phase 2: Equal distribution of funding across City Council Districts based on Pavement Area
❖ Allocate Stop-Gap/ Maintenance Funding (10% of Annual Funding) for immediate street maintenance/ repairs to be performed by City's Streets Maintenance Crew

Street Selection Approach

Care was taken to develop a policy that spreads pavement improvements throughout the City while focusing on grouping pavements into projects that are close to save on mobilization costs.

The plan utilizes the City's StreetSaver pavement management program to identify and select pavements that are at a critical point and are strong candidates for pavement maintenance and rehabilitation.

CITY OF SALINAS
Street Selection Prioritization Plan for Pavement Management

ANNUAL STREET REHABILITATION AND MAINTENANCE BUDGET

STOP-GAP / MAINTENANCE ~10% of Budget

RESIDENTIALS PHASE ONE
(To Level District PCIs)
Weighted Avg PCI: 48.5
(34,391,586 SqFt - 55.2%)
~30% of Budget

District 1	District 2	District 3	District 4	District 5	District 6
10.9%	11.9%	28.3%	14.4%	12.6%	21.8%
(3,749,938 sf)	(4,102,526 sf)	(9,734,520 sf)	(4,960,834 sf)	(4,347,855 sf)	(7,495,913 sf)
67.3 PCI	41.7 PCI	42.2 PCI	44.7 PCI	39.9 PCI	58.5 PCI

Step 1: Generate WER (Weighted Effectiveness Ratio) for Each Street Segment
Step 2: Group Streets By District & Calculate Weighted Average PCI For Each District
Step 3: Focus on District with Lowest PCI
Step 4: Assign PCI Score (using Alt. PCI Score Chart) & WER Score for each Street Segment
Step 5: Generate Priority Street List for based on Priority Score (WER Score + PCI Score = Priority Score)

STREET LIST
(For District with Lowest Weighted Average PCI)

RESIDENTIALS PHASE TWO
Weighted Avg PCI: 48.5
(34,391,586 SqFt - 55.2%)
~30% of Budget

Step 1: Generate WER (Weighted Effectiveness Ratio) for Each Street Segment
Step 2: Assign PCI Score and WER Score for Each Street Segment
Step 3: WER Score + PCI Score = Priority Score
Step 4: Sort by Priority Score (Highest to Lowest)
Step 5: Generate Street List for Each District based on Priority Score

District 1 Street List	District 2 Street List	District 3 Street List	District 4 Street List	District 5 Street List	District 6 Street List

MAJOR STREETS
Weighted Avg. PCI: 58.1
(26,661,356 SqFt - 42.8%)
~60% of Budget

Step 1:
Generate WER, then Assign PCI Score, ADT Score, & WER Score to each Street Segment

Step 2:
Group Street Segments (1/4 to 1/2 Mile Sections), Calculate Weighted Averages for ADT, PCI, & WER for Grouped Sections

Step 3:
Calculate Priority Score (Priority Score = ADT Score + PCI Score + WER Score)

Step 4:
Sort Streets by Priority Score (Highest to Lowest)

STREET LIST

Rev3
01/11/2024

<u>Prioritizing Strategy</u>

The annual budget amount would be divided into three to cover different categories of roads. 60% would be dedicated to the City's Major streets (Arterials and Collectors), 30% to Residential streets, and 10% would be reserved for "Stop-Gap/ Maintenance". The overall strategy is illustrated in the chart above.

Major Streets – The Major Streets are comprised of all the City's Arterial and Collector Street segments. These are the streets that are most heavily traveled throughout the city, and used by every portion of the city's residents, businesses, and visitors alike.

The Major Street selection strategy develops project street lists from a three-step process. Step one (1) uses the City's StreetSaver® program to generate a Weighted Effectiveness Ratio (WER) and a PCI for each Major Street segment. StreetSaver® performs a life-cycle cost analysis and assigns a Weighted Effectiveness Ratio (WER) to each street segment based on the next treatment cost and anticipated service life. Using ADT data collected by the City, each segment is assigned an ADT Score, a PCI Score, and a WER Score. Step two (2) involves grouping the Major Street segments into project sized groups (approximately ¼ mile to ½ mile sections) based on pavement condition and estimated treatment. Once the groups are defined, weighted averages for the ADT Scores, PCI Scores, and WER Scores for each group need to be calculated. Step three (3) would then be calculating the total Priority Score for each group, which is the sum of the ADT Score, PCI Score, and WER Score, and then sorting the groups by their priority score from highest to lowest.

The Score Charts below define how the ADT Score, PCI Score, and WER Scores would be determined for the Major Streets. For the ADT Score and the WER Score, the higher the street segment's ADT, or WER, the higher the score. For the PCI score the highest score goes to the segments in the 61-70 PCI Range, then goes down from there, but the lowest scores go to the highest PCI range. 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 is a rehabilitation treatment, which costs significantly more.

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

Residential Streets – The street selection strategy for the Residential streets is a two (2) phase approach.

Phase One of the Residential Street selection plan was developed as a short-term strategy, with the intention of equalizing, or leveling, the PCI's of each district. The Residential Phase One Street Selection Strategy develops priority street lists based on the weighted average PCI for each District. The district with the Lowest PCI would be focused on and given priority until the weighted average PCI for each district are more equal. The weighted average PCI for each District is currently as follows:

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

Phase One of the Residential Street selection strategy would develop a priority street list from the district with the lowest average PCI (Currently District 5) using a three-step process. Step one (1) uses the City's StreetSaver® program to generate a Weighted Effectiveness Ratio (WER) and a PCI for each of the residential street segments within District 5. Step two (2) assigns a PCI Score (using the Alternative PCI Score Chart) and WER Score for each street segment in District 5. Step three (3) then calculates the Priority Score (the sum of the PCI Score and WER Score) for each District 5 street segment, then sorts the streets by their Priority Score, from highest to lowest.

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 Street Selection Plan involves dividing the available budget between the six (6) city council districts, based on the percentage of pavement area within each district. The percentage of funds will be allocated as follows:

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

Phase Two of the Residential Street selection strategy develops priority street lists from a three-step process. Step one (1) uses the City's StreetSaver® program to generate a Weighted Effectiveness Ratio (WER) and a PCI for each of the residential street segments within each district. Step two (2) assigns a PCI Score and WER Score, from the Residential Score Charts below, which is then used to calculate a Priority Score (the sum of the PCI Score and WER Score) for each street segment. Step three (3) then sorts the streets in each district by their Priority Score, from highest to lowest. This produces a separate priority list for each district.

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

Stop-Gap/ Maintenance – The budget allocation for Stop-Gap/ Maintenance is intended to be used for Streets that need immediate street maintenance/ repairs outside the Priority List, that can be performed by the City's Street Maintenance Crew.

Summary

The Strategies used to develop this Street Selection Policy and Prioritization Plan create an efficient, un-biased, and repeatable process for Prioritizing streets for selection in a pavement maintenance and/or rehabilitation project. This policy will assist the City in their efforts to use a critical point management approach to managing their pavement City wide. Emphasis has been placed on improving the condition of the City's critical Major Streets.