Attachment 6
PAVEMENT PRIORITIZATION PLAN
City of Santa Rosa's Pavement Story

Executive Summary

Based on the City of Santa Rosa's Pavement Management Program (PMP), this Plan recommends adoption of a resolution that provides policy guidance for future expenditures of street rehabilitation funds. A preliminary five year pavement preservation plan is included as Attachment A. (TBA)

This Plan highlights the following:

- PMP findings based on citywide pavement distress surveys. A 2014 survey indicates that Santa Rosa's three-year average Pavement Condition Index (PCI) is 61.
- The PMP projected deterioration of the pavement condition based on the current projected street pavement rehabilitation funding level of about $5.4M per year for the next five years (FY 17/18 -21/22). As shown in Attachment A. (TBA)
- WORST FIRST vs BEST FIRST –
    - Years 1-5 average $36.5M/year and after year 5 the network will be a PCI of 64. This scenario forces StreetSaver to do the "worst first".
    - When we allow StreetSaver to select the best candidates at the proper time it suggests that $24M/year (scenario of PCI=65 in 5 years then hold), after year 5, the network PCI will be 65.

Ventura Drive between Bicentennial Way and Paulin Drive

Failed Pavement | **Excellent Pavement**

PCI 14, Last maintenance?? | *PCI 100, Last maintenance 2014*

Background

Maintaining our local transportation infrastructure supports two Council Goals:

- City Council Goal 2B, specifically Strategic Objective 2 – Develop Funding plan for long-term Unfunded Liabilities, including Labor and Infrastructure, to Achieve Fiscal Sustainability and
- City Council Goal 3 – Provide Leadership for Environmental Initiatives, specifically Strategic Objective 1 – Improve Transportation Network to Reduce Vehicle Miles Traveled and Promote Multi-Modal Transportation.

The City of Santa Rosa is responsible for maintaining 492 center line miles (1,094 lane miles) of local streets and roads.

- Streets vary from two-lane (residential) streets to six-lane (arterial) streets. There are 93 miles of streets that serve transit routes and 120 miles of street that have on-street bikeways.

Classification	Lane Miles	Percentage	PCI (2014)
Arterial	307	28%	64
Collector	162	15%	60
Residential	625	57%	59
Total	1,094	100%	60 (Good)

- Santa Rosa's street quality ranks 82nd out of 109 Bay Area cities. The Metropolitan Transportation Commission (MTC) uses the Pavement Condition Index (PCI) to rate streets from Excellent (score of 90-100) to Poor (score of 0-49). Based on a 2014 survey, Santa Rosa's three-year average PCI is 61. The Bay Area average PCI is 66.

- StreetSaver provides informed and timely solutions to implement pavement management programs. It includes the following analysis tools – Budget Needs, Budget Scenarios, Target Driven Scenarios and Project Selection. StreetSaver prediction model can project maintenance treatments and costs up to 30 years.

- It is least expensive to maintain a street in good condition than to allow it to deteriorate and reconstruct it at a later date. The average cost of street maintenance is:
  - $3 Per square yard for slurry seal (preventative maintenance)
  - $10 Per square yard for micro-surfacing (preventative maintenance)
  - $41 Per square yard for resurfacing (less than 3 inch overlay)
  - $47 Per square yard for heavy resurfacing (3 inch overlay)
  - $172 Per square yard for reconstruction

- A recent report prepared by TRIP, a National Transportation Research Group, ranks the "Santa Rosa Area" third in a list of 25 urban regions with a population between 250,000 and 500,000 with the greatest share of major roads and highways with pavements that are in poor condition and provide a rough ride. This percentage is largely based on the road network condition in the unincorporated area of Santa Rosa. The analysis is based

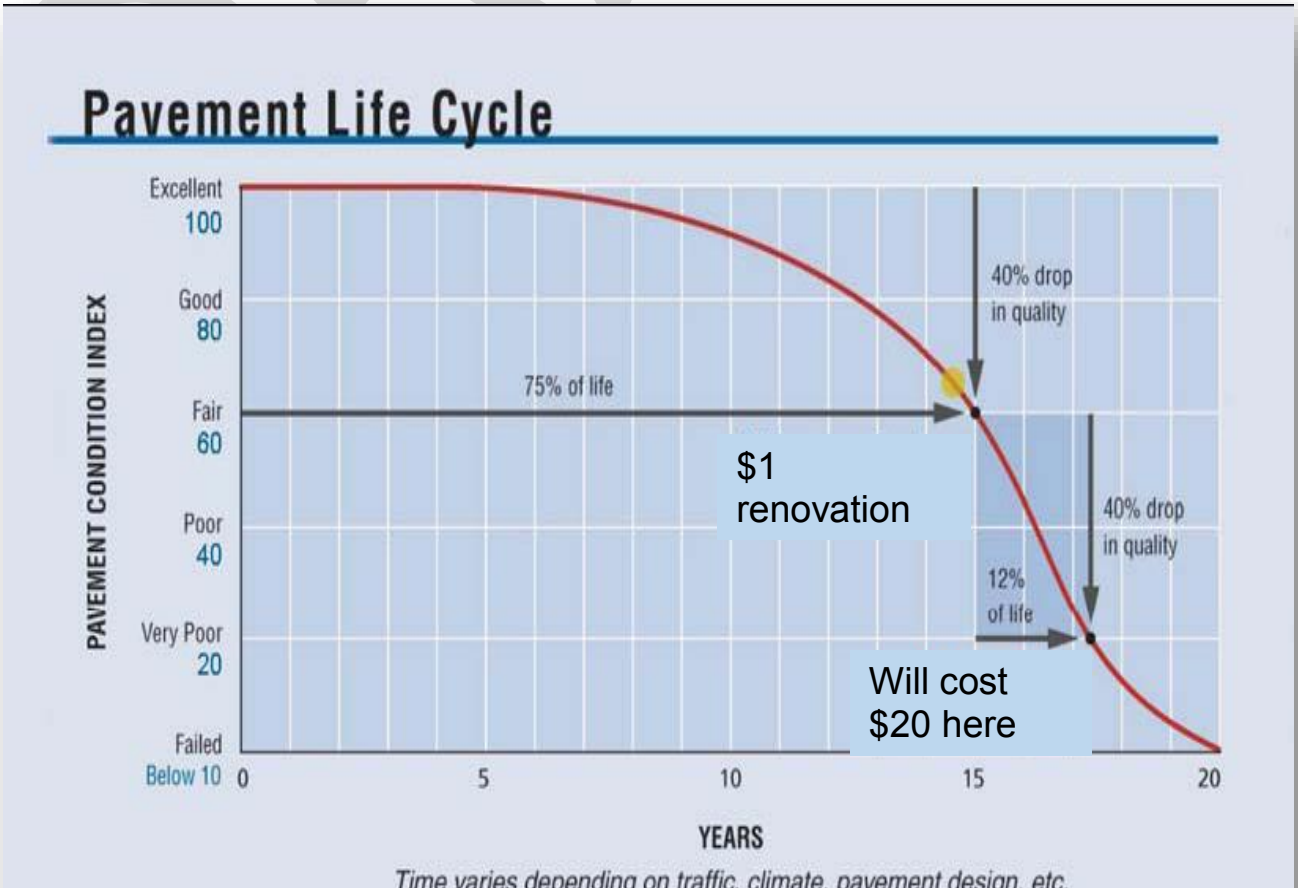
on an IRI (International Roughness Index) which evaluates "ride quality" and not road stability, such as PCI (Pavement Condition Index), which is the predominant metric for the Bay Area.

- According to the TRIP report, the average motorist in the Santa Rosa area is spending an estimated $811.00 per year in additional vehicle operating costs as a result of driving on roads in need of repair.

- Santa Rosa's local streets and roads form the foundation of providing access to jobs, homes, schools, shopping, recreation and health and social services. They are the required infrastructure for commerce, transit, and active transportation modes. Sewer and water mains and trunk lines are predominately located beneath the surface network of Santa Rosa's local streets and roads. Why pavement maintenance is important for Santa Rosa can be found in the Appendix.

- Pavement Treatments

    - Full Depth Reclamation – rebuilds/recycles entire roadway section including subgrade and asphalt concrete surface
    - Asphalt overlay – repairing underlying damage and applying a new layer of asphalt with or without fabric depending distresses.
    - Slurry seal/Micro seal/crack seal – preventive maintenance surface seals
    - Cold in-Place Recycling – new and promising technique that has been shown to cut asphalt rehabilitation costs by 20 percent to 40 percent and to reduce greenhouse gas emissions from pavement repair projects by eliminating the need to produce new paving material or transport it to the job site.



Street Reconstruction Priority

- When reviewing streets that have degraded passed the typical maintenance of micro-seal and overlays, and the base and or subgrade of the roadway structural section has failed, a reconstruction of the street is required. This typically occurs when the Pavement Condition Index reaches 25 but could occur beforehand if the base or subgrade has failed. Applying a maintenance scheme to a street with a failed base is not cost effective especially if the placement of asphalt is done on an unstable failed subgrade. This would yield little extended life to the roadway. Reconstruction of a street is the most expensive treatment and is a result of prior neglect. See Pavement Life Cycle above.

- To prioritize in what order streets should be reconstructed, the City has developed a method to help rank what the overall benefit to the community is and compares that to other streets that require a reconstruction. Several factors used to aid in the ranking of the streets include: the average daily traffic, bus routes, emergency response route designation, bike lanes (existing or planned with reconstruction project), and parking (paving for parking decreases the ranking). Additionally, if other underground Capital Projects are planned for the roadway which are in need of repair, then underground utilities will be coordinated with the surface street improvements. Most of the ranking elements have sliding scales associated with them. For example, the Emergency Response Route uses the Fire Departments "Streets by Fire Run Type" map and is scored per type of route: Primary = 5 points, Secondary = 4 points, Neighborhood Access = 2 points, and Local = 0 points. (Attachment B is a map of Pavement Prioritization Projects included in the proposed 5 year plan). (TBA)

- Bike lanes have a significant weight in this ranking due to the disintegration of asphalt and the affect the asphalt debris has on bike riding comfort and ease. As asphalt breaks down, it generally finds its way to the gutter. As the gutter is swept, the asphalt is not always collected, but redistributed into the bike lane. Cyclist then tend to utilize the portion of the bike lane closer to the travel lane, where the asphalt and debris is less prevalent. The more the asphalt degrades, the more debris finds its way to the bike lane.

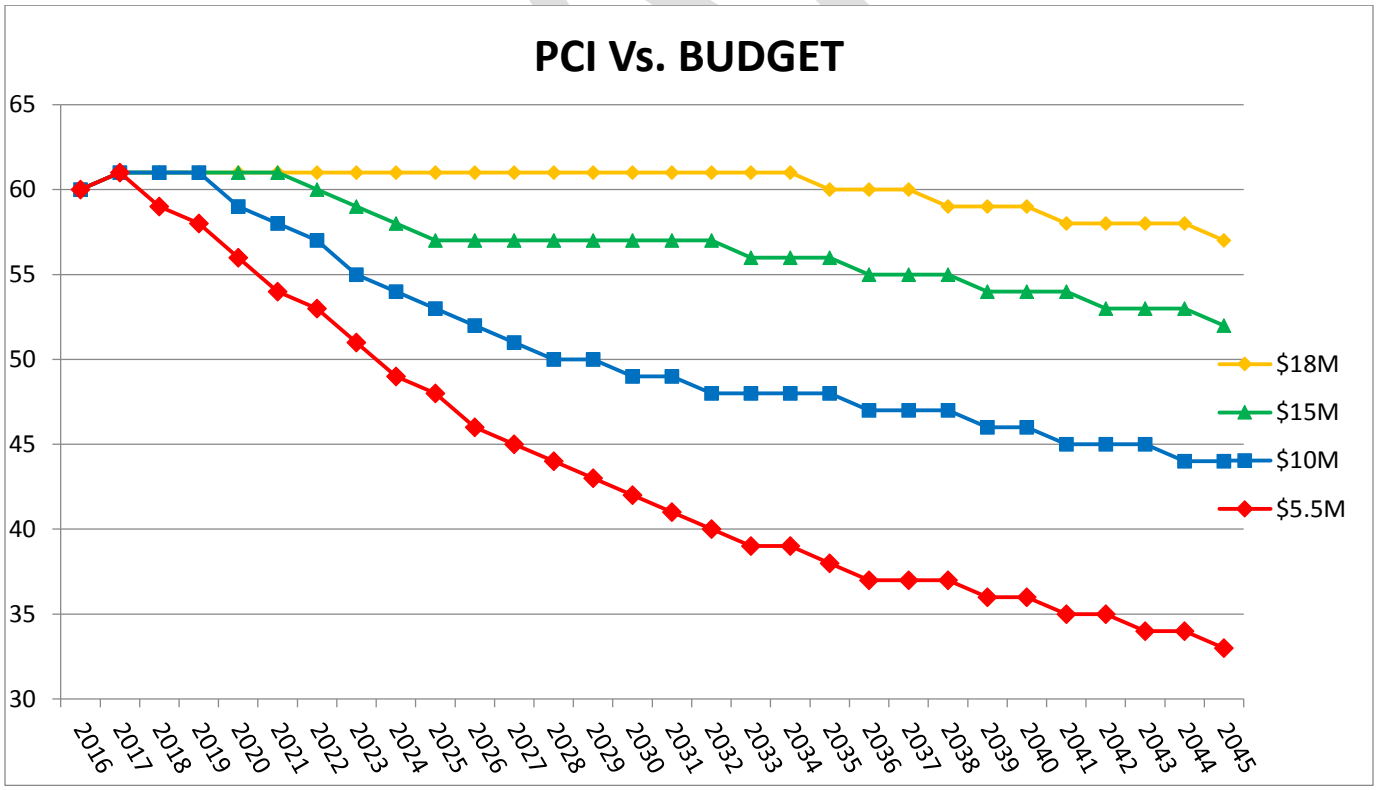
Pavement Funding

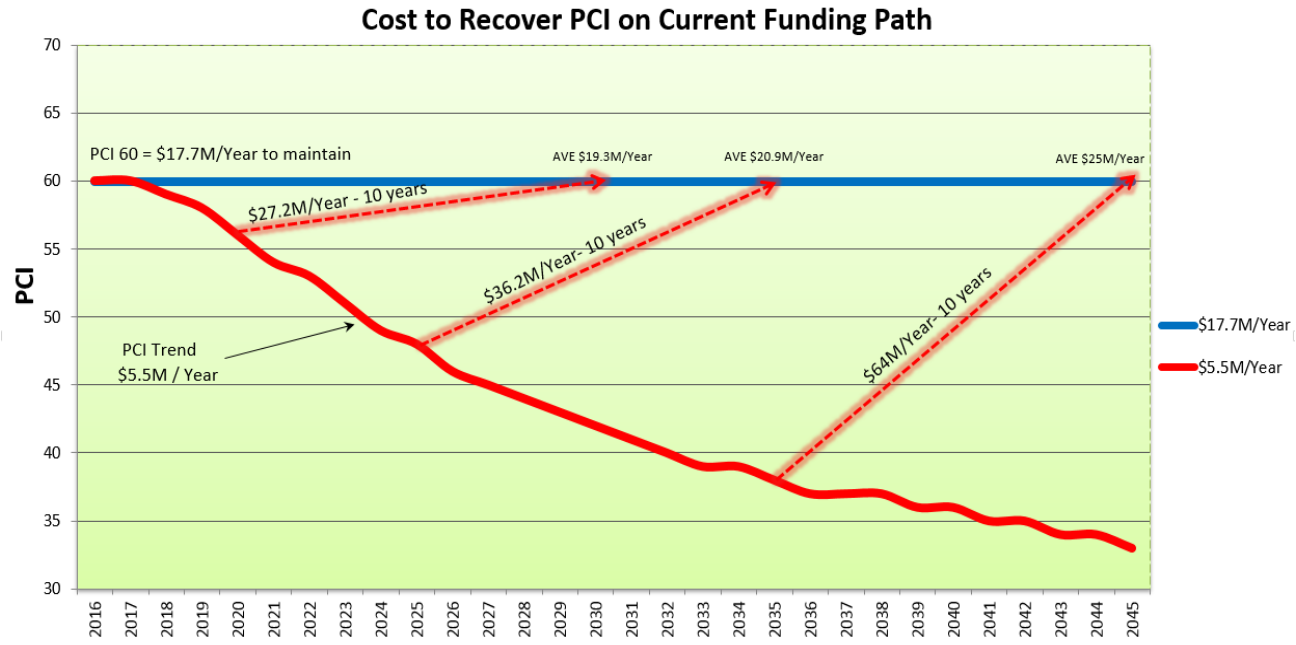
- Santa Rosa would need to spend $18M per year just to maintain the existing pavement conditions at 60. The current annual spending is $5.4 M.

- Over the past few decades there has been a declining trend in investment for transportation infrastructure. This has been due primarily to declining gas tax revenues and unfavorable state and federal formulas allocating transportation infrastructure funding.

- The NUMBERS –
  - To fix all of our streets that are PCI <25 over 7 years it would take $203,119,000.
  - To get to a network average PCI of 65 over 5 years it would take $121,131,000 ($24,226,000/year). It would then take about $19,206,000/year to maintain a PCI of 65.
  - To get to a network average PCI of 65 over 10 years it would take $238,979,197 ($23,897,920/year). It would then take about $18,662,000/year to maintain a PCI of 65.

- WORST FIRST vs BEST FIRST –
  - If we only treat sections that are PCI<25, the network average PCI after 7 years will be 61. ($29M/year).
  - For the above scenario, years 1-5 average $36.5M/year and after year 5 the network will be a PCI of 64. This scenario forces StreetSaver to fix the "worst streets" first
  - At $24M/year (scenario of PCI=65 in 5 years then hold), after year 5, the network PCI will be 65. This scenario allows StreetSaver to select the best street repair candidates at the proper time.





Next Steps

One of the 2015 – 2017 City Council Goals Strategic Objectives and Performance Measure is 2B. Financial Sustainability - Develop funding plan for long-term unfunded liabilities, including labor and infrastructure, to achieve fiscal sustainability. Pavement is a major asset for the City at an estimated value of $1.1 billion. It needs to be addressed in a comprehensive and sustainable way which can be achieved as a component of the City's annual budget process. The City is reviewing and may incorporate new technologies in pavement maintenance, such as Cold in-place recycling, full depth reclamation and recycling plant mobilizing in order to reduce pavement reconstruction costs and fix more streets within a limited budget.

The City needs a stable revenue stream in order to maintain the pavement in a state of good repair.

Pavement Treatment Current and Prioritization Plan - Recommended Projects

- Insert Five Year CIP of Pavement Maintenance Projects (Attachment A) (TBA)
- Insert Map of Five Year CIP of Pavement Maintenance Projects (Attachment B) (TBA)

Recommendations

- Continue to focus on preserving pavement of local streets and roads by applying the MTC Pavement Management System (StreerSaver) in order to receive ongoing federal, state and county funding.
- Support the Sonoma County Transportation Authority (SCTA) in any potential efforts to approve a re-authorization of Measure M.
- Support state and federal actions to increase transportation funding for the maintenance of local streets and roads.
- Potentially adopt a resolution that establishes a prioritization plan for the City's pavement maintenance program.