Webinar: Potholes and Pavement Condition
Hosted by Brant Arthur, Community Affairs Specialist
December 10, 2019
Agenda

County-wide. CTP Goals - Pavement Condition Index (PCI) – James Cameron – Sonoma County Transportation Authority

City. Pavement Repairs and Costs – Rich Yahn & Matt Baker – City of Santa Rosa

Regional. StreetSaver®, State of Good Repair (SGR) Costs, Pothole report, Vital Signs – Sui Tan – Metropolitan Transportation Commission
CTP Goals

- Maintain the System
- Relieve Traffic Congestion
- Reduce Greenhouse Gas Emissions
- Plan for Safety and Health – Added during 2009 CTP update
- Promote Economic Vitality – Added during 2016 CTP update
Local Roads

Pavement management has steadily been losing ground due to:

- Sheer volume of roads
- State roads funding formula
- Storm events
- Age of the system
Pavement Condition Index (PCI)

The PCI ranges and their meanings:

<table>
<thead>
<tr>
<th>Category:</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Range:</td>
<td>60-69</td>
<td>70-79</td>
<td>80-89</td>
<td>90+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category:</th>
<th>Failed</th>
<th>Poor</th>
<th>At-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Range:</td>
<td>0-25</td>
<td>25-49</td>
<td>50-59</td>
</tr>
</tbody>
</table>
• Maintain the System: Pavement Condition – Improve countywide PCI (Pavement Condition Index) for arterial and collector streets to 80 by 2040. Improve countywide PCI for residential streets to 65 by 2040. **Source: MTC Streetsaver system.**
2018 Pavement Condition Index - By Road Type

Target PCI 80 = V. Good
Target PCI 60 = G.
Pavement Life Cycle

Time varies depending on traffic, climate, pavement design, etc.
Pavement Life Versus Treatment Type

Deterioration curve is determined by loading, pavement quality, climate, etc.
New Pavement: PCI = 100 (Very Good - Excellent)
PCI 14 (Failed)
PCI 61 (Fair) – current average PCI
Pavement Maintenance

- Preservation, PCI = 60 and higher
  - Crack- & Slurry-Seals & Micro-surfacing
- Stop-Gap (Band-Aid) Maintenance, PCI = 0 to 49
  - Pothole repairs
  - Patching
- Rehabilitation, PCI = 59 or below
  - Overlays and Reconstruction; some with Geogrid/GlasGrid Interlayers
- Newer Technologies (~25 to 40% less cost than rehabilitation; not yet used due to limitations in urban environment)
  - Cold-in-place recycling
  - Full-Depth-Reclamation
  - Cape Seal/Rubber Cape Seal (a double seal coat, i.e., one applied on top of the other)
Slurry Seal (~$6/Sq. Yd.)
Overlay (~$53/Sq. Yd.)
Reconstruction (~$191/Sq. Yd.)
Length of Street Treated with $1 Million

- Surface Seals: 5 street miles
- Overlay: 1 street mile
- Reconstruct: 0 street miles
Pavement Needs- Update

- Replacement of our ~500 centerline miles of City pavement network would require ~ $1.1 Billion

- Maintenance Spending over time:
  - Past 20 years spending roughly 0.5% (~$5.4 Million annually)
  - Now budgeting about $12.4 Million per year (with Utility Impact Fee & recent SB1 $$)

- 1.6% of the network value (or ~$17.5 Million) per year is needed to maintain it at the current PCI of 61. For comparison:
  - Homebuyers budget up to 4% for annual maintenance (Source: US News and Freddie Mac)
  - Average drivers spend about $1,186 per year for maintenance and repair, or 4% for a $30,000 car (Source: AAA)
Cost to maintain network PCI Vs. Current funding path

PCI 61 = $17.5M/Year to maintain

PCI Trend
$12.4M/Year
PCI 61 = $17.5M/Year to maintain

$21.4M/Year - 10 years

$24.6M/Year - 10 years

$33.6M/Year - 10 years

AVE $18.4M/Year

AVE $18.6M/Year

AVE $19.5M/Year
Pothole Report URL: https://srcity.org/
Step 2

Report a Problem Online

We want to make it easier for City of Santa Rosa residents, businesses and visitors to report and track non-emergency issues in the City of Santa Rosa 24-hours a day, 7 days a week. Whether it be potholes, street light outages, sidewalk, trash in the roadway, and litter, check this page often for new issue types. We will be expanding our services over time.

To report issues in areas not serviced by the City of Santa Rosa, please utilize the County of Sonoma 311Report application. For emergencies or potential emergency situations, always call 9-1-1.

How to Report a Problem

Submitting a problem report is simple:

1. Access the MySantaRosa Application through your desktop or mobile computer.
2. For easier use, allow the application to use your current location (optional).
3. Proceed as a “Guest.”
4. Select one of the main categories (Park/Tree Reports, Street, Road Transport, etc).
5. Check the green “Submit a Report” at the bottom of the screen.
6. Select the Type of Problem you wish to report (sidewalk, unhomed, etc.).
7. Be sure to enter your email; you will receive an automated message notifying you that your request has been received.

What Happens Next?

- If you entered an email address, you will receive an automated message notifying you that your request has been received.
- No further updates will be sent but City staff has received your report and will update the status of the report.
- Once the report has been addressed, the item will no longer be shown on the map.

NOTE: The map only shows new (Received/Submitted) and in progress (In Progress) reports. Once a report has been finalized, it will be removed from the map.
Other Jurisdictions – Reporting

**Unincorporated County**
NEED TO SUBMIT A SERVICE REQUEST for trash pick up, potholes, vegetation maintenance and more?
Go to the soco report it website here:
http://sonomacounty.ca.gov/Services/SoCo-Report-It/Submit-a-Service-Request/
OR DOWNLOAD THE SOCO REPORT IT APP TO YOUR PHONE:

**Town of Windsor**
Virtual Suggestions Box:
https://www.townofwindsor.com/1035/Submit-a-Request-or-Concern
Public Works Street Maintenance Contact Information:
Sui Tan

- Mr. Tan graduated with a B.S. in Civil and Environmental Engineering from the University of Wisconsin-Madison. He has over 25 years of experience as a registered civil engineer specializing in asset management for streets, highways and bridges. He has involved in the implementation of many pavement management systems using StreetSaver® for cities and counties in the United States and India. His work includes condition assessment, data quality management, performing investment analyses, and presenting results to decision makers. He lectures at universities, teaches workshops, and organizes StreetSaver user conferences. He has co-authored research papers that emphasizing effective uses of PMS and pavement preservation integration.

- Mr. Tan currently works as a program manager for the Metropolitan Transportation Commission in San Francisco, CA, an MPO for the 9-county, 100-city San Francisco Bay Area. He oversees StreetSaver® software development, R&D, sales and marketing.

- He currently serves as chair of the Local Governments subcommittee of the Transportation Research Board (TRB) on pavement management systems (AFD10), as a member of the standing committee (AFD10), and FHWA Pavement Preservation Expert Task Group.
StreetSaver® - Computer Software Tool

• Network Level Pavement Management System
• Designed for Local Agencies
• Cost Effective vs. “Worst First”
• Used by all Bay Area Jurisdictions; 500+ nationwide

1. Inventory
2. Condition Assessment
3. Needs Assessment
4. Prioritization
5. Investment Analysis
6. Feedback

Asset Management Framework
StreetSaver® - Basic Input and Outputs

**Inputs**
- Condition Assessment
- M&R Work
- Unit Costs

**Analysis**
- Decision Tree
- Funding
- Cost Effectiveness Engine

**Outputs**
- Future Pavement Condition
- Candidate Projects
- Repair Costs

StreetSaver
Keeping good roads good!
Regional Local Street Repair Program Benefits

Local Benefits

Asset Management
- PTAP / Certification
- Needs / Condition Assessments
- Best Practices
- Training

Revenue / Advocacy
- Sales Tax Analyses
- Statewide Representation

Support
- Council Presentations
- Awards
- LSR Working Group
Regional Local Street Repair Program Benefits

Regional Benefits

Revenue/ Advocacy
- Statewide Needs Assessment
- Revenue Measure Analysis

Planning
- Needs/Condition Assessments
- Benefit/Cost Assessments
- Freight Route Condition/Needs
- Regional Policy Impacts
- HPMS/MIRE Reporting
- Asset Data Integration
- http://www.vitalsigns.mtc.ca.gov/street-pavement-condition
Impact of StreetSaver® on Funding Policy

Regional / State Investment in LSR

<table>
<thead>
<tr>
<th>Year</th>
<th>Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>$143</td>
</tr>
<tr>
<td>2005</td>
<td>$991</td>
</tr>
<tr>
<td>2009</td>
<td>$7,500</td>
</tr>
<tr>
<td>2013</td>
<td>$10,000</td>
</tr>
<tr>
<td>2017</td>
<td>$7,600</td>
</tr>
</tbody>
</table>

$s143$ $991$ $7,500$ $10,000$ $7,600$ $10,000$

2001 2005 2009 2013 2017
## 2018 Pavement Condition:

### Bay Area Countywide Comparison

<table>
<thead>
<tr>
<th>City</th>
<th>Arterial</th>
<th>Collector</th>
<th>Residential</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>75</td>
<td>67</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>Contra Costa</td>
<td>74</td>
<td>70</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Marin</td>
<td>70</td>
<td>65</td>
<td>65</td>
<td>66</td>
</tr>
<tr>
<td>Napa</td>
<td>71</td>
<td>59</td>
<td>52</td>
<td>56</td>
</tr>
<tr>
<td>San Francisco</td>
<td>72</td>
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<tr>
<td>San Mateo</td>
<td>74</td>
<td>73</td>
<td>70</td>
<td>72</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>75</td>
<td>71</td>
<td>67</td>
<td>70</td>
</tr>
<tr>
<td>Solano</td>
<td>72</td>
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<tr>
<td>Sonoma</td>
<td>72</td>
<td>64</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td><strong>Bay Area</strong></td>
<td><strong>74</strong></td>
<td><strong>69</strong></td>
<td><strong>64</strong></td>
<td><strong>68</strong></td>
</tr>
</tbody>
</table>

## Total Maintenance Needs: 2020-2050

### Table 1. Draft PBA2050 Pavement and Non-Pavement System Preservation Needs Assessment for Local Streets and Roads (In $ Millions)

<table>
<thead>
<tr>
<th>County</th>
<th>Needs (Maintain Conditions)</th>
<th>Needs (SGR)</th>
<th>Available Revenue*</th>
<th>Remaining Need (Maintain Conditions)</th>
<th>Remaining Need (SGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>$7,940</td>
<td>$8,977</td>
<td>$4,629</td>
<td>$3,486</td>
<td>$4,347</td>
</tr>
<tr>
<td>Contra Costa</td>
<td>$6,101</td>
<td>$6,878</td>
<td>$2,972</td>
<td>$3,175</td>
<td>$3,905</td>
</tr>
<tr>
<td>Marin</td>
<td>$1,374</td>
<td>$1,676</td>
<td>$930</td>
<td>$506</td>
<td>$747</td>
</tr>
<tr>
<td>Napa</td>
<td>$871</td>
<td>$1,290</td>
<td>$972</td>
<td>$4</td>
<td>$318</td>
</tr>
<tr>
<td>San Francisco</td>
<td>$5,189</td>
<td>$5,759</td>
<td>$3,290</td>
<td>$1,900</td>
<td>$2,469</td>
</tr>
<tr>
<td>San Mateo</td>
<td>$3,824</td>
<td>$4,220</td>
<td>$2,308</td>
<td>$1,545</td>
<td>$1,912</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>$10,186</td>
<td>$11,290</td>
<td>$5,084</td>
<td>$5,347</td>
<td>$6,206</td>
</tr>
<tr>
<td>Solano</td>
<td>$2,838</td>
<td>$3,351</td>
<td>$1,197</td>
<td>$1,641</td>
<td>$2,154</td>
</tr>
<tr>
<td>Sonoma</td>
<td>$3,028</td>
<td>$4,446</td>
<td>$2,183</td>
<td>$964</td>
<td>$2,263</td>
</tr>
<tr>
<td><strong>REGION</strong></td>
<td><strong>$41,351</strong></td>
<td><strong>$47,886</strong></td>
<td><strong>$23,565</strong></td>
<td><strong>$18,569</strong></td>
<td><strong>$24,321</strong></td>
</tr>
</tbody>
</table>

*Where a surplus of revenue exists to meet the maintenance needs, revenues are assumed to equal the need. Therefore, the total revenue differs in both the Maintain Existing and SGR scenarios. The revenue depicted in Table 1 shows the total available for the SGR scenario. “Needs” – “Available Revenue” will not equal “Remaining Need” for the Maintain Conditions scenario in Table 1.
Federal, State and Local Funding

State and Federal Subventions (Primarily Gas Tax)

Federal Funding only eligible for arterials and collectors
Measure M

- 20 year – ¼% sales tax for transportation
- Voters approved expenditure plan in November 2004
- Generates approximately $26M annually

Renewal November 2020

- Expires in 2025
- Highway 101 near complete
- Maintenance Focus likely
- Need funding to compete for State and Federal funds, ie SB-1
What Next?
CTP Performance Assessment Process

- Review Goals and Targets
- Analyze CTP Projects
- Analyze Policies and Technology

What will it take to meet CTP Goals and Targets?
January – CTP Goals Workshop

- Do the CTP Goals still represent the priorities of SCTA?
- Should any be changed/removed?
- Should new goals be added?
- How should we measure progress or success?

ACTION: Approve CTP Goals & Performance Targets