Transportation System Maintenance and Preservation

Issue: How should transportation system maintenance and preservation needs be addressed in the 2016 MTP/SCS update?

Recommendation: That the Board provide feedback and direction to staff regarding future analysis and information the Board will need to decide how best to address system maintenance and preservation needs in the 2016 MTP/SCS update.

Committee Action/Discussion: One of the Board’s key policy issues in the 2016 MTP/SCS update is the question of how much of the region’s transportation maintenance and preservation needs can be addressed in the plan.

In December, the Board adopted the Policy Framework for the MTP/SCS Update Process, which identifies a series of implementation questions and challenges that staff should address during this update cycle. Among these questions and challenges are three items of particular importance for a discussion on transportation system maintenance and preservation:

1. Can the region capture the revenues projected to come from all sources local, state and federal?
2. Is there enough emphasis on system maintenance (“fix-it-first”) investments?
3. Should there be changes in the timing of transportation investments?

In March, the Board also adopted an approach to scenario development to inform the 2016 MTP/SCS update that focuses on an analysis of the effects of different phasing of transportation investments and land development patterns on the transportation system, local road and transit maintenance budgets, air quality, greenhouse gas reductions, and other resources.

To kick off the discussion on system maintenance and preservation, staff presented summary information to the Board committees on road maintenance and rehabilitation funding needs in October 2013 (Attachment A), as well as a summary of transit needs in March 2014 (Attachment B). Attachment C identifies Board comments and questions posed to staff during these presentations and ongoing or upcoming work to address these items. As part of the ongoing conversation on maintenance and preservation needs in the region, staff is seeking Board guidance on the policy mechanisms the Board would like to explore in more detail as the work on the MTP/SCS update progresses over the coming months.

An important question will be how much, if any, of the MTP/SCS budget should be shifted toward maintenance, and if additional revenues are needed, where should they come from? Further, how does the timing of system preservation investments impact costs and phasing of other investment priorities in the plan?

Staff is developing a summary of investment strategies that the Board may elect to pursue as part of the 2016 MTP/SCS update. A set of materials describing these investment strategies will be distributed prior to the Board meeting. Staff is seeking additional Board input and guidance on how best to direct future work and analysis that will equip the Board with the information it will need to decide how best to address system maintenance and preservation needs in the 2016 MTP/SCS update.

Approved by:

Mike McKeever
Chief Executive Officer

MM:CH:gg

Attachments

Key Staff: Sharon Sprowls, Senior Program Specialist, (916) 340-6235
Kacey Lizon, MTP/SCS Manager, (916) 340-6265
Clint Holtzen, MTP/SCS Project Coordinator, (916) 340-6246
System Maintenance

2016 Metropolitan Transportation Plan/
Sustainable Communities Strategy
System Maintenance

• California Statewide Local Streets and Roads Needs Assessment
  – Identifies 10-year investment required to bring the system up to date
• California’s network of local streets & roads represents a $189 billion dollar public investment
• This investment is approaching a critical point in its life cycle and is in need of major repairs
PCI Score 70-100
Good Condition
Prev. Maint. – surface seals every 5–7 years ($2.70-2.80/sy)

PCI Score 50-70
At-Risk Condition
Thin Asphalt-Concrete Overlay
($17.90 to $29.10/sy)
PCI Score 25-50
Poor Condition
Thick Asphalt-Concrete Overlay
($26.40 to $29.10/sy)

PCI Score 0-25
Failed Condition
Reconstruction
($61.20 to $91.80/sy)
Preventive Maintenance (yearly), 21%
Seal Coats (at 7 years), 5%
Asphalt Resurface (at 15 years), 21%
Reconstruction (at 30 years), 53%

Preventive Maintenance (at 3 years), 5%
Seal Coats (at 5 years), 7%
Asphalt Resurface (at 10 years), 33%
Reconstruction (at 20 years), 55%

Well-Maintained Road Total Cost Per Mile: $3-4 Million
Poorly-Maintained Road Total Cost Per Mile: $4-5 Million
Major Funding Gaps

What would it take to reach a PCI of 80 on local streets and roads within 10 years?

- **Statewide:**
  - $107 Billion in Local Needs
  - $25 Billion in Funding
  - $82 Billion Shortfall

- **SACOG Region**
  - $6 Billion in Local Needs
  - $2-3 Billion in Funding
  - $3-4 Billion Shortfall
Consequences of Deferred Maintenance

- If this problem is not addressed, road conditions will continue to deteriorate & maintenance backlogs will continue to grow

Source: Statewide Needs Assessment

Source: City of Davis Pavement Management Report
Funding for System Maintenance

- Gas Tax: 30-50%
- Local Sales Tax: 10-20%
- Local General Funds: 5-10%
- Other State/Local: 15-25%
- Federal: ~10%

Statewide Local Spending on Roads
Challenges Moving Forward

• Finding opportunities to capture additional revenues
• Confronting tradeoffs between system expansion and system preservation
• Supporting rural infrastructure where funding is even more limited
• Limiting impacts to regional residents
• Considering other local system (transit, active transportation) and state highway system maintenance needs
• Determining whether a PCI target of 80 within 10 years is reasonable and/or attainable for this region?
Transit Funding:
State-of-Good Repair Analysis
Transit Service in the MTP/SCS

Service Hours (thousands)

LRT  Bus
Transit Funding Gap

Statewide:
$35 billion transit system preservation needs
$14.5 billion in funding
$20.5 billion funding gap

SACOG Region:
$1.7 billion transit system preservation needs
$.5 billion in funding
$1.21 billion funding gap
### Annual Transit Operations and Maintenance Costs in the MTP/SCS

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2020</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Route Bus</strong></td>
<td>$100 million</td>
<td>$150 million</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Light Rail</strong></td>
<td>$46 million</td>
<td>$55 million</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Demand Response</strong></td>
<td>$35 million</td>
<td>$38 million</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$181 million</td>
<td>$243 million</td>
<td>34%</td>
</tr>
</tbody>
</table>
### Large Transit Capital Needs: Vehicles

<table>
<thead>
<tr>
<th></th>
<th>Regionwide Total Vehicles</th>
<th>Estimated Cost of Rehab/Replacement over next decade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Route Buses</strong></td>
<td>~520</td>
<td>$200 million</td>
</tr>
<tr>
<td><strong>Demand Response</strong></td>
<td>~240</td>
<td>$40-50 million</td>
</tr>
<tr>
<td><strong>Light Rail Cars</strong></td>
<td>97</td>
<td>&gt;$200 million</td>
</tr>
</tbody>
</table>
10-Year Transit System Needs vs Projected Revenues

Estimated Cumulative 10-year Vehicle, Facility, and Equipment Needs vs Projected Revenues

- Cumulative Capital Preservation Needs
- Projected Current Funding Sources

Millions

- $0
- $100
- $200
- $300
- $400
- $500
- $600
- $700
- $800
- $900

Years:
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024
Transit Operations: Funding Sources

- Sales Taxes (~32%)
- Transit Fares* (~31%)
- State** (~13%)
- Federal (~20%)
- Other local (~4%)
Transit **Operations**: Key Funding Challenges

- High % of total operating revenue from volatile sales tax sources
- Fee programs typically for capital or system expansion, not operations of existing
- Nearly all Fed & State funding restricts this type of expenditure
Other Key Funding Challenges

- Increasing Competition for Federal & State Discretionary Funding
- End of Prop 1B Bond Program for Transit
- Fare Revenues Unlikely to Rebound Without Sufficient Service Recovery
- Challenges to Increasing Farebox Recovery
- Local Sales Tax Options not Promising in Near-Term
Next Steps & Policy Issues

• Integrate analysis of system maintenance needs with other travel modes
• Identify unique challenges and opportunities by MTP/SCS community type
• Highlight tradeoffs between system maintenance and system expansion priorities
• Offer strategies for SACOG planning and funding efforts
<table>
<thead>
<tr>
<th>Board Identified Issues/Questions for Consideration</th>
<th>Next Steps &amp; Ongoing Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balancing of capital road and transit projects versus maintenance and rehabilitation</td>
<td>Staff will provide additional summary information at the April Board Meeting on policy mechanisms the Board may elect to investigate as part of the 2016 MTP/SCS update that address phasing, prioritization, and funding options for state-of-good repair investments.</td>
</tr>
<tr>
<td>Strategies for funding road maintenance in existing neighborhoods</td>
<td></td>
</tr>
<tr>
<td>Impact of infrastructure serving new developments on ongoing maintenance and rehabilitation needs</td>
<td></td>
</tr>
<tr>
<td>Federal opportunities in MAP-21 and reauthorization to focus on state-of-good repair investments</td>
<td></td>
</tr>
<tr>
<td>Additional revenue options needed to fully fund maintenance and operations budgets.</td>
<td></td>
</tr>
<tr>
<td>Integration of complete streets elements into routine road maintenance</td>
<td>Staff will research the state of existing practices at the local, state, and federal level as part of ongoing research for the 2016 MTP/SCS update.</td>
</tr>
<tr>
<td>Consideration of clean fuel vehicles in analysis of ongoing fleet maintenance and replacement needs</td>
<td>Approximately two-thirds of the region’s bus fleet consists of clean-fuel vehicles (e.g. CNG, Bio-Diesel, Hybrid). Staff will continue to work with operators on examining the implications of this for future fleet management practices.</td>
</tr>
<tr>
<td>Consideration of ridership and productivity on various transit modes compared to operations, maintenance, and capital costs</td>
<td></td>
</tr>
<tr>
<td>Analysis of transit demands and service strategies in various community types and demographics</td>
<td></td>
</tr>
<tr>
<td>Analysis of ridership and fare assistance programs (e.g., student discounts, employer benefits, senior and disabled special fares)</td>
<td></td>
</tr>
<tr>
<td>Comparison of costs, benefits, and public perception of bus services compared to rail options</td>
<td></td>
</tr>
<tr>
<td>Investigate alignment between federal funding criteria and local priorities</td>
<td></td>
</tr>
<tr>
<td>SACOG role/position on high-speed rail and related inter-regional rail. What is SACOG’s role if the high speed rail program moves forward with implementation?</td>
<td>Staff will brief the Transportation Committee on prior comments and active inter-agency coordination efforts related to the High Speed Rail Authority and regional rail JPAs (Capitol Corridor, San Joaquin).</td>
</tr>
</tbody>
</table>
Attachment D

Supplemental information for Item #13 – Transportation System Maintenance and Preservation

How should transportation system maintenance and preservation needs be addressed in the 2016 MTP/SCS update?

This attachment contains supplemental information for Item #13 related to the Board Workshop on Transportation System Maintenance and Preservation. Staff is not seeking any action from the Board at this time for any of the information presented. The investment strategies presented in Table 1 are for discussion purposes only. These strategies do not represent a staff recommendation or a framework for a preferred scenario for the 2016 MTP/SCS.

SACOG staff presented the summary of investment strategies in Table 1 to the Transportation Committee at its April 3, 2014 meeting. The Committee provided staff with direction on additional research and information that will be needed to adequately support Board discussions about investment strategies included in the 2016 MTP/SCS. Committee direction was as follows:

- Provide additional details on the tradeoffs inherent in Investment Strategies C and D including information on specific projects funded through past regional funding programs that may have been subject to delay without regional funds.
- Provide specific options and additional analysis on new revenue sources that could support system preservation investments described in Investment Strategies C and D.
- Provide enough detail in future analysis so that transit and road investment strategies can be measured and evaluated separately.
- Coordinate with the Sacramento Transportation Authority on assumptions regarding Measure A and the potential for future sales tax measures in the county.

The information presented in Table 1 represents a first step in addressing three of the key implementation challenges described in the Policy Framework adopted by the Board in December, 2014:

1. Can the region capture the revenues projected to come from all sources local, state and federal?
2. Is there enough emphasis on system maintenance (“fix-it-first”) investments?
3. Should there be changes in the timing of transportation investments?

The Approach to Creating and Analyzing Scenarios adopted by the Board at its March, 2014 meeting lays out two of the critical next steps in addressing the questions posed by the Policy Framework. First, analyze different timing to construction of transportation and land use components of current MTP/SCS and second, analyze different levels and types of transportation revenue. The attached process map (Attachment E) shows these two efforts occurring over the coming summer and into the fall in preparation for public workshops in October and Board action on a Draft Preferred Scenario Framework in December, 2014.

Staff is seeking additional input and guidance on how best to direct future work and analysis that will equip the Board with the information it will need to decide how best to address system maintenance and preservation needs in the 2016 MTP/SCS.
Table 1: How should transportation system maintenance and preservation needs be addressed in the 2016 MTP/SCS update?

<table>
<thead>
<tr>
<th>Possible Range of Investment Strategies:</th>
<th>B. Assume continued slow economic recovery constraints ability to implement the 2012 MTP/SCS</th>
<th>C. Achieve a state of good repair (SGR) for transit and local roads within the 20 year planning horizon for the MTP/SCS</th>
<th>D. Achieve a state of good repair (SGR) for transit and local roads in the first 10 years of the MTP/SCS</th>
<th>Summary of assumptions informing each investment strategy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current MTP/SCS Budget (2014-2035) excluding Caltrans maintenance expenditures on the state highway system.</td>
<td>Project forward trends from 2008-2011 that suggest challenges to meeting current MTP/SCS performance targets.</td>
<td>Expenditures on transit and local roads to achieve state of good repair within the next 20 years.</td>
<td>Expenditures on transit and local roads to achieve state of good repair within the next 10 years.</td>
<td>Projected revenue of $200 million in State of Good Repair funds available in the next 2 years.</td>
</tr>
<tr>
<td>Recent service and finance recovery declines continue, setting at 20% state minimum requirement.</td>
<td>Recent service and finance recovery declines continue, setting at 20% state minimum requirement.</td>
<td>Increase emphasis on shifting funding from road capacity expansion.</td>
<td>Increase emphasis on shifting funding from road capacity expansion.</td>
<td>Fiscal environment will see significant reallocation of resources.</td>
</tr>
<tr>
<td>Increased store of funding towards State of Good Repair transported to prior plans.</td>
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<tr>
<td>Increased bond recoveries (BOR) from production services and more supportive land uses over time.</td>
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<td>Increased bond recoveries (BOR) from production services and more supportive land uses over time.</td>
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</tr>
</tbody>
</table>

Total cost to implement each investment strategy: $24 Billion | $20.3 Billion | $34.5 Billion | $25.7 Billion |

Breakdown of costs into expenditures for each investment strategy: |

| Local Road Maintenance and Rehabilitation | $5.8 Billion | $5.8 Billion | $5.8 Billion | $5.8 Billion |
| Transit Capital Preservation | $11.5 Billion | $11.5 Billion | $11.5 Billion | $11.5 Billion |
| Transit Capital Expansion | $5.1 Billion | $5.1 Billion | $5.1 Billion | $5.1 Billion |
| Active Transportation | $2.7 Billion | $2.7 Billion | $2.7 Billion | $2.7 Billion |

State of good repair (SGR) strategies used to achieve goals of each investment strategy: |

| Local Road Maintenance and Rehabilitation | $12.1 Billion | $12.1 Billion | $12.1 Billion | $12.1 Billion |
| Transits & BRT | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Transit Capital Preservation | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Transit Capital Expansion | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Active Transportation | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Road Capacity Expansion | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |

Funding shortfall after implementing each state of good repair strategy: |

| Local Road Maintenance and Rehabilitation | $12.1 Billion | $12.1 Billion | $12.1 Billion | $12.1 Billion |
| Transits & BRT | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Transit Capital Preservation | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Transit Capital Expansion | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Active Transportation | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |
| Road Capacity Expansion | $0.6 Billion | $0.6 Billion | $0.6 Billion | $0.6 Billion |

Likely effects to the MTP/SCS of implementing each investment strategy: |

<table>
<thead>
<tr>
<th>Likely to the MTP/SCS of implementing each investment strategy:</th>
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<th>Likely to the MTP/SCS of implementing each investment strategy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement conditions deteriorating to poor (PCI&lt;50) and failed (PCI&lt;25) condition in some communities throughout the region.</td>
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</tr>
<tr>
<td>Deterioration of transit assets</td>
<td>Deterioration of transit assets</td>
<td>Deterioration of transit assets</td>
<td>Deterioration of transit assets</td>
</tr>
<tr>
<td>Increased transit productivity risk in the plan accompanied by reduced increases in state and local funding for significant transit oriented development and DSR.</td>
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<td>Increased transit productivity risk in the plan accompanied by reduced increases in state and local funding for significant transit oriented development and DSR.</td>
<td>Increased transit productivity risk in the plan accompanied by reduced increases in state and local funding for significant transit oriented development and DSR.</td>
</tr>
<tr>
<td>Increased bike and walk travel supported through network of local and regional trails and sidewalks and complete streets improvements.</td>
<td>Increased bike and walk travel supported through network of local and regional trails and sidewalks and complete streets improvements.</td>
<td>Increased bike and walk travel supported through network of local and regional trails and sidewalks and complete streets improvements.</td>
<td>Increased bike and walk travel supported through network of local and regional trails and sidewalks and complete streets improvements.</td>
</tr>
<tr>
<td>Reduced road capital budget results in likely delay in bottleneck repair projects and higher growth in congestion.</td>
<td>Reduced road capital budget results in likely delay in bottleneck repair projects and higher growth in congestion.</td>
<td>Reduced road capital budget results in likely delay in bottleneck repair projects and higher growth in congestion.</td>
<td>Reduced road capital budget results in likely delay in bottleneck repair projects and higher growth in congestion.</td>
</tr>
</tbody>
</table>

Note: The investment strategies presented in this table are for discussion purposes only. These strategies do not represent a staff recommendation or a framework for a preferred scenario for the 2016 MTP/SCS. The purpose of this table is to provide information about a wide range of possibilities available to the region to begin addressing the implementation challenges presented in the board adopted policy framework, including:

1) How much, if any, of the MTP/SCS budget should be shifted toward maintenance? |
2) If additional revenues are needed, where should they come from? |
3) How does the timing of system preservation investments impact costs and phasing of other investment priorities in the plan?
SCENARIO APPLICATION

METHODOL-

ogy

RFP FOR EIR

CONSULTING

SERVICES

PUBLIC

WORKSHOP

QUESTIONS

EIR

CONSULTANT

SELECTION

DRAFT

WORKSHOP

QUESTIONS

PUBLIC

WORKSHOP

APPROACH

APPROACH

ISSUE EXPLORATION

• TRANSPORTATION FUNDING CHALLENGES
• REVIEW OF REGIONAL GROWTH PROJECTIONS
• REGIONAL TRANSPORTATION MONITORING REPORT
• OVERVIEW OF LOCAL ROAD MAINTENANCE CHALLENGE

DRAFT POLICY FRAMEWORK

ADOPT PREFERENCES FRAMEWORK

ROAD MAINTENANCE NEEDS

TRANSIT MAINTENANCE NEEDS

SYSTEM PRESERVATION & STATE OF GOOD REPAIR

GREENFIELD LAND USE INVENTORY

SCENARIO DEVELOPMENT FRAMEWORK

RFP FOR EIR CON�ULTING SERVICES

PHASING ANALYSIS ON CURRENT MTP/SCS

ADAPT PREPARED SCENARIO FRAMEWORK

PUBLIC WORKSHOPS

TRANSPORTATION REVENUE ANALYSIS

SCENARIO ANALYSIS

• LAND USE INVENTORY (CONTINUED)
• TRANSPORTATION PROJECT INVENTORY
• HOUSING DEMAND RESEARCH
• FLOOD/LEVÉE RESEARCH
• HCP AND ENTITLEMENT STATUS RESEARCH
• SUBURBAN ECONOMIC RESEARCH
• INFRASTRUCTURE COST ANALYSIS
• WATER SUPPLY RESEARCH

PUBLIC WORKSHOP APPROACH

PUBLIC WORKSHOP APPROACH

DRAFT WORKSHOP QUESTIONS

EIR CONSULTANT SELECTION

INFORMATION & BOARD DIRECTION

ACTION OR OTHER MILESTONE

CONTINUED IN 2015

2013

2014

J A S O N D J F M A M J J A S O N D

MARCH 18, 2014 *THIS PROCESS MAP WILL BE UPDATED MONTHLY AS NEEDED