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SAVING OUR STREETS

A Strategic Plan for Maintaining the
Bay Area's Local Streets and Roads

May 2007

Prepared by the Local Streets and Roads
Working Group of the San Francisco Bay Area Partnership

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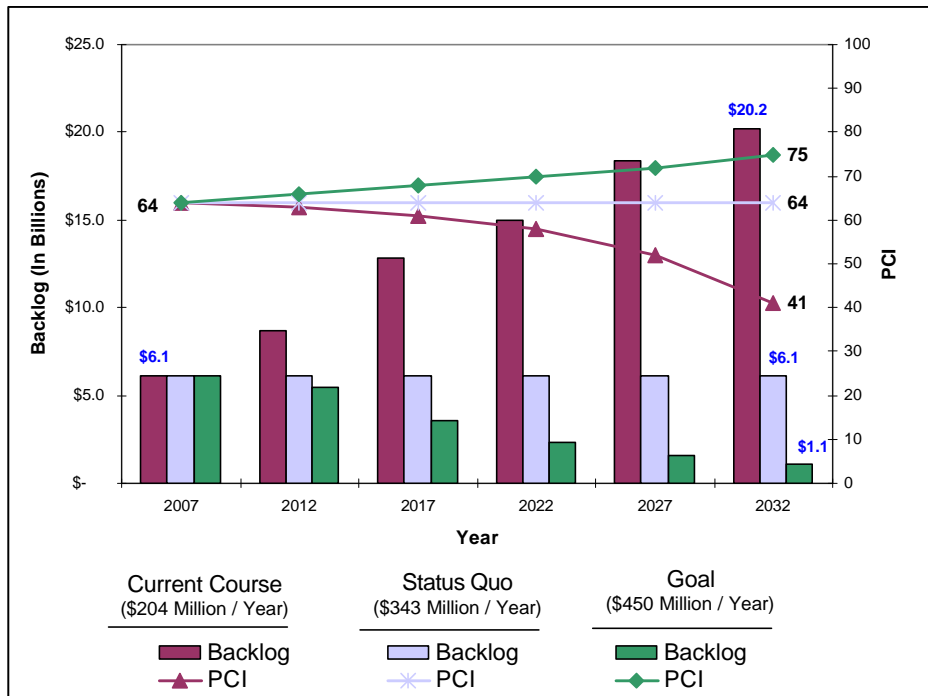
INTRODUCTION

The purpose of this *Local Streets and Roads Strategic Plan* is to focus on this regionally significant transportation system—an asset valued at \$40 billion—and how it must be maintained. The quality of the region’s local street and road system is in a significant state of decline. Current funding investments are not sufficient to adequately maintain, operate, and improve the system in accordance with regional goals and community expectations.

Currently, the average Pavement Condition Index (PCI) of the San Francisco Bay Area’s local street and road network is 64—on a scale of 0 to 100, with 100 being best. While this score places the average quality of the region’s roads in the “fair to good” category, the nature of a pavement lifecycle is that at a PCI of 60, deterioration begins to take place at a very rapid rate.¹ Once rapid deterioration begins to take place, the overall cost of repairs required to bring the network back to good condition increases dramatically due to the high differential in cost between preventive maintenance treatments and major rehabilitation or reconstruction. The difference between the cost of the work needed to bring the network to good condition versus the money available is called the “backlog.”

The chart below illustrates how the region’s overall pavement maintenance backlog and average pavement conditions would fare over time given different levels of annual maintenance funding².

Figure 1: Regional Maintenance Backlog and PCI over Time Under Different Annual Funding Scenarios (In 2006 Dollars)



¹ Refer to Figure 3 on page 5 for more information on the pavement deterioration curve.

² Based on analyses performed with the MTC pavement management software – Street Saver 8.0 ©

If investment in the maintenance of the region's local street and road network remains at the current level of approximately \$204 million per year, the pavement quality of a majority of streets and roads will fall into the "poor" or "failed" category within the next twenty five years and the backlog of needed repairs will grow from the current figure of \$6.1 billion, to over \$20 billion. Just to keep the region's level of backlog and pavement condition the same over time, the region will need to increase funding for maintenance by 68% to \$343 million per year. In order to significantly reduce the backlog amount and increase the region's average PCI to 75, the average annual level of expenditure on pavement maintenance would need to more than double to \$450 million per year. However, once a PCI level of 75 is reached, the on-going cost of maintaining a network in that condition would be dramatically lower, and that would free up funds for use in other priority areas.

Deteriorating pavement quality is only one of the challenges facing the region's local street and road infrastructure. This strategic plan will address the goals and objectives for improving the entire local street and road network, including safety and efficiency measures that are necessary to accommodate a growing population.

The Local Streets and Roads Working Group, an advisory group to the Bay Area Partnership, has developed this Strategic Plan to bring attention to the Bay Area's deteriorating roadway infrastructure problem. The target audience includes Metropolitan Transportation Commission (MTC) Commissioners along with local, regional and state officials and policymakers who put forth legislation and develop budgets that can change the course of infrastructure investment throughout California.

This Strategic Plan will

- Provide input to the development of the 2009 Regional Transportation Plan
- Provide input to the MTC Legislative Program for both state and federal platforms
- Ensure the needs of the local street and road system are considered in the allocation of regional transportation funds
- Inform elected officials, policymakers, and the public about the far reaching negative effects of our deteriorating roadway infrastructure

VISION STATEMENT

Increase the average Pavement Condition Index (PCI) for the Bay Area from 64 to 75 by the year 2035, and provide a safe, efficient and well-maintained local street and road network in the Bay Area Region for all travel modes.

STRATEGIC PLAN GOALS

GOAL 1

Maintenance – develop maintenance strategies and performance standards to effectively allocate resources

GOAL 2

Safety – improve the safety of the local street and road network in the Bay Area for all modes of travel

GOAL 3

Efficiency and Environment – Reduce greenhouse gas emissions and particulate matter by improving the operations and lifespan of the local street and road network

GOAL 4

Financial – develop the financial resources in the Bay Area to adequately maintain, operate and improve the local street and road network

GOAL 1: Maintenance

Develop maintenance strategies and performance standards to effectively allocate resources

DISCUSSION:

Ideally, the average PCI of the region’s local street and road network would be about 85— the condition at which roadways are the most cost-effective to maintain. To achieve that condition over the next 25 years, the region as a whole would need to invest three times the amount that is currently being invested in local streets and roads maintenance. To achieve the more modest goal of 75, maintenance expenditures will need to double.

Figure 2: Regional Pavement Condition Scenarios Based on Funding Levels

| | Existing Funding | Break-Even | Goal |
|--|-----------------------|-----------------------|-----------------------|
| Average Regional PCI in 2032: | 41 | 64 | 75 |
| Average Annual Expenditure Level: | \$ 204,420,223 | \$ 343,487,854 | \$ 449,724,490 |
| Annual Expenditure / Lane Mile: | \$ 4,986 | \$ 8,378 | \$ 10,969 |

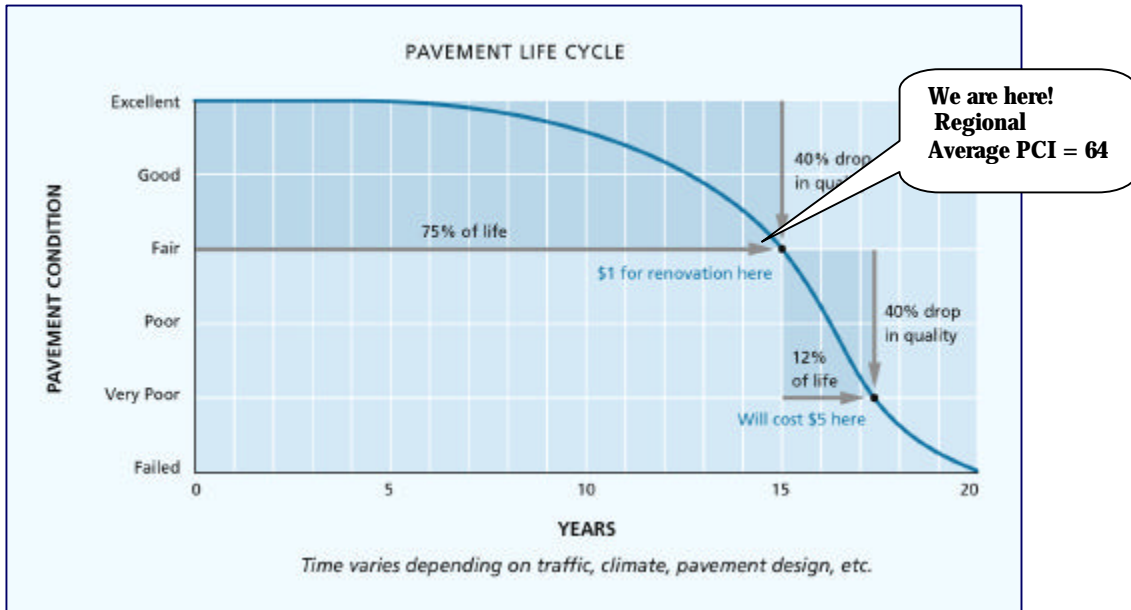
*PCI = Pavement Condition Index (Scale of 0 to 100, with 100 being the best)

With all of the competition that exists in the Bay Area for government funds, it is unlikely that there will ever be sufficient resources available to maintain the local street and road network at the optimal level. Therefore, it is critical that every dollar that is made available for street and road maintenance be put to its best use. Just as it is less expensive in the long run to change a car’s oil filter regularly than it is to replace the engine every few years, it costs far less to maintain roads in good condition than it does to allow them to deteriorate to a point where major rehabilitation or reconstruction is required.

The old strategy of fixing the worst streets first is not cost effective and has contributed to the deteriorated state that our region’s local street and road network is currently in. This strategy prioritizes major rehabilitation or pavement reconstruction and is a reactive approach to pavement maintenance. Ignoring low-cost preventive treatments when pavement is still in good condition results in costs that are anywhere from five to twenty times greater when repairs are delayed until major rehabilitation or reconstruction of the roadway is required.

Pavement preservation is the concept of *applying the right treatment to the right roadway at the right time*. This strategy normally prioritizes the application of preventive maintenance treatments that address aging, oxidation, surface deterioration, and normal wear and tear from day-to-day performance and environmental conditions. If regular preventive maintenance is applied to roadways with a PCI of 70 or above—deterioration can be better managed and the life of the roadway greatly extended. Therefore, funding strategies for local streets and roads must support and encourage effective pavement preservation.

Figure 3: Pavement Life Cycle



Many jurisdictions rely on a pavement management system to provide appropriate recommendations on when to apply pavement preservation treatments. By using an integrated pavement management system, a manager can select the best repair strategies and projects and select the proper proportion of preventive maintenance to optimize available dollars and extend the service life of the pavements.

OBJECTIVE: Encourage use of proven pavement preservation strategies to achieve an average pavement condition index of 75 for the local street and road system in the Bay Area.

Action Items:

1. *Establish “Fix it First” policies* –Increasingly it is being recognized that taking good care of what you already have is a sound investment. In the Transportation 2030 regional transportation plan, “fix it first” policies were adopted that have led to an increased allocation of federal gas tax funds for pavement maintenance.
2. *Condition maintenance funds on local jurisdictions’ effective use of a pavement preservation program* –MTC and its partners have identified a distribution formula that rewards cities and counties that are putting more local resources into their roadway networks and making maximum use of efficiency measures such as preventive maintenance practices.
3. *Support MTC’s continued administration of the Regional Streets and Roads Program at the regional level* – MTC has worked closely with Bay Area cities and counties to standardize pavement management systems, provide technical assistance and compile

a comprehensive inventory of local pavement conditions and funding needs. These efforts result in the more cost effective use of the public's investment in the transportation system.

4. *Support pavement preservation education* – New interest in the concept of pavement preservation within government transportation agencies and academic institutions has resulted in an abundance of training and technical resources to help improve maintenance practices. The Local Streets and Roads Working Group members encourage the use of these resources among their peers in the local public works agencies.

GOAL 2: Safety

Improve the safety of the local street and road network in the Bay Area for all modes of travel

DISCUSSION: Roadway infrastructure that is in disrepair or not up to current standards is a public safety issue. All roadway infrastructure projects should consider appropriate ways to maintain or enhance safety by keeping pavement free of potholes, improving accessibility with ADA ramps and establishing safe pedestrian and bicycle facilities. Adding shoulders to rural roads that are carrying much more traffic than they were designed for will improve safety for both motorists and bicyclists. Addressing the maintenance needs of local bridges in the region will help avoid the serious consequences to congestion and public safety if bridges fail. When considering needed safety improvements, the funding shortfall for maintaining the local street and road network becomes even larger.

OBJECTIVE:

A) Implement safety improvements to the local street and road network to lower collision rates and to reduce fatalities region wide by 10% by the year 2035.

Action Items:

1. *Implement the Strategic Highway Safety Plan in the Bay Area* – Implementation will include working with key stakeholders such as the California Highway Patrol and emergency and health service providers to identify safety issues, prioritize them, and devise regional solutions.
2. *Implement the Routine Accommodation Policy and, when possible, provide for the construction and maintenance of pedestrian and bicycle facilities on the local street and road network.*
3. *Implement a Regional Safe Routes to School Program*

B) Rehabilitate or Replace all structurally deficient and functionally obsolete local bridges in the Bay Area

Action Items:

1. *Conduct a needs assessment for local bridges* – There are over 1,900 local bridges in the Bay Area. The last extensive estimate of bridge needs was completed in 1999. Although federal Highway Bridge Replacement and Rehabilitation (HBRR) funds have been available to address much of the maintenance needs, many bridge repair projects have not been undertaken due primarily to the lack of local funding available to match the federal program. A needs assessment should be conducted in order to identify those local bridges that are still in need of repair.

2. *Identify matching funds to maximize available HBRR funds* – While the recently passed Proposition 1B bond measure included \$125 million to be used as local matching funds to the HBRR program, only those bridges identified in the measure as still requiring seismic retrofitting are eligible for the funds. Proposition 1B funds cannot be used as local match for local bridge maintenance or rehabilitation projects. The Bay Area should work with the State to implement a local match program for local bridges not covered by Proposition 1B.

3. *Work with Caltrans and relevant permitting agencies to improve the delivery process for local bridge projects* – Another obstacle to completing local bridge maintenance projects is the difficulty that jurisdictions have in meeting the stringent environmental clearance demands in the project delivery process. Local bridge projects often spend years, if not decades in the design phase in order to meet project delivery requirements. Encourage the State to develop a streamlined environmental process for local bridge projects to expedite bridge maintenance and rehabilitation.

GOAL 3: Efficiency and Environment

Reduce greenhouse gas emissions and particulate matter by improving the operations and lifespan of the local street and roads network.

DISCUSSION: Every day, people make choices about the best ways to make trips to their jobs, shopping, school or recreation. The traveling public benefits when they have an expanded range of choices for making trips according to their personal requirements for travel time, cost, convenience and reliability. As every traveler knows, certain corridors are already heavily congested and future regional growth will result in continued traffic problems throughout the Bay Area. The effort to make Bay Area travel easier and more convenient stretches across multiple jurisdictions and all travel modes.

Each piece of the regional transportation system needs to be optimized to work as efficiently as possible with all components smoothly meshing to create a unified network. The local street and road network is an integral part of the regional transportation system. Motorists, transit, pedestrians and bicyclists use the network to travel within and between communities. An efficient local street and road network is critical for the efficiency and reliability of the transit bus system, emergency services and goods movement.

“Particulate matter is essentially small particles that are suspended in the air and settle to the ground slowly. These particles may be re-suspended if disturbed. The most common sources of particulate matter from oil and gas operations are dust or soil entering the air during pad construction or **from traffic on access roads**, and diesel exhaust from vehicles and engines used to power machinery at oil and gas facilities.”

PM10 particles (with a diameter less than 10 micrometers) are small enough to be inhaled and can cause adverse health effects. PM2.5 particles (with a diameter less than 2.5 micrometers) can lodge deep within the lungs and cause serious health problems. They are the main cause of visibility impairment, or haze.

OBJECTIVE: Optimize operations for all travel modes for the local street and road network in the Bay Area and reduce both greenhouse gas emissions and particulate matter.

Action Items:

1. *Optimize operations of the local street and road network through comprehensive and consistent signage, signal and Intelligent Transportation System improvements, and intersection modifications*
2. *Work with the Congestion Management Agencies (CMAs) to integrate the local street and road network into corridor management plans.*

3. *Support land use principles to promote a more efficient use of the existing local street and road network* – Prioritize effective routine maintenance of the existing network to limit potholes and other pavement distresses, thus reducing the wear and tear on transit buses and improving safety for bicyclists and motorists. Furthermore, improvements made to non-pavement assets (part of the local street and road network) such as sidewalks, increases the walk-ability of existing communities, reduces pedestrian accidents, and makes the transportation system as a whole more efficient.

GOAL 4: Financial

Develop the financial resources in the Bay Area to adequately maintain, operate and improve the local street and road network

DISCUSSION: The local street and road system in the San Francisco Bay Area represents the largest single regional public investment in transportation. Over 41,000 lane miles of county roads and city streets have been constructed and are being maintained by the region's nine counties and 101 cities. The unfortunate reality is that the quality of the region's local street and road network is in a significant state of decline. Current funding investments are not sufficient to adequately maintain, operate, and improve the \$40 billion dollar system in accordance with regional goals and community expectations.

Lack of funding for operations and maintenance of the local street and road network is causing the transportation network to deteriorate at such an alarming rate that potholes have become commonplace. This situation is much more than an annoyance to the driving public. Major deterioration is producing a critical backlog of needed repairs, rising costs to repair vehicles, and decreased safety. If the problem is not addressed today, repair costs will accelerate dramatically in the future. If this is allowed to occur, the only future repair option will be complete roadway reconstruction, at a cost five to twenty times greater than what is required by providing preventive maintenance now.

OBJECTIVE: Increase funding for maintenance and rehabilitation projects to help eliminate the \$10.9 billion twenty-five year shortfall and provide adequate funding to increase the average PCI for the Bay Area from 64 to 75 by 2035.

Action Items:

1. *Accurately identify the funding necessary to sustain and improve the local street and road network at the regional level and support the effort to update the local streets and roads needs statewide.*
2. *Encourage the prioritization of discretionary regional funding for maintenance and rehabilitation of the existing transportation system in the 2009 Regional Transportation Plan—i.e., “Fix it First”.*
3. *Increase/Index gas tax* - Attempts to remedy the eroding gas tax base should include the following:
 - Enact MTC authority to implement a regional gas tax or fee.
 - Increase the State gas tax periodically and index the gas tax automatically to adjust for inflation, or convert the gas tax to a percentage of the fuel cost.
 - Consider a direct user fee based on miles traveled (i.e., a “mileage tax”) to provide equity in revenue collection from all motor vehicles regardless of fuel efficiency and fuel source.

4. *Support vehicle registration legislation like Senate Bill 1611 (Simitian)* – SB1611 authorizes local congestion management agencies (CMA) or county boards of supervisors, if there is not a CMA in a county, to enact up to a \$25 vehicle registration surcharge to be devoted to transportation improvements.
5. *Pursue local sales tax measures* – Support new local sales tax measures and renewal of the existing countywide sales tax measures in all Bay Area counties and advocate that a responsible share of these measures be devoted to local streets and roads maintenance.
6. *Establish business improvement districts* – Special districts exist in downtowns and business districts throughout the country, from small cities to large cities like Los Angeles, Chicago, Philadelphia, Sacramento, Long Beach and San Diego. Research options to allow Bay Area communities to pursue this public/private partnership tool to provide improvements to the local streets and roads in these districts.
7. *Enact citywide assessment districts* – Support cities proposing a property assessment for transportation system maintenance and operations in general, or for a particular citywide service like pavement maintenance or street lighting.
8. *Pursue local bond measures* – Recently, cities have successfully gained voter approval of bond measures to improve parks, library, police, and fire facilities. Similar efforts should be initiated to improve a local jurisdiction’s transportation infrastructure.