CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Hans F. Larsen

SUBJECT: PAVEMENT MAINTENANCE

DATE: 10-05-10

Approved

Date 10/5/10

COUNCIL DISTRICT: Citywide

OUTCOME

The desired outcome of the Pavement Maintenance Study Session is for the City Council to:

- Obtain a greater understanding of the current and projected conditions and funding needs of the City's pavement network.
- Understand the various funding alternatives and strategies to improve pavement conditions.
- Engage in a focused discussion regarding future goals, strategies, potential policy directions and next steps that could help the City address its pavement maintenance needs.

EXECUTIVE SUMMARY

The City's pavement network of 2,370 miles of streets is at a critical stage of its life cycle. For several decades, ongoing funding for the Pavement Maintenance Program has consistently been short of levels needed to perform adequate preventive maintenance and rehabilitation work, resulting in an overall pavement condition rating of fair, with 18% (425 miles) of the City's streets in poor condition, and a $250 million backlog of deferred maintenance. Future funding projections paint an even bleaker picture with annual funding levels falling further short of the amounts needed just to keep the system in its current condition.

Unless additional on-going funding is secured in the next few years, the pavement network will more rapidly decline to an overall condition rating of poor, with over 54% (1,275 miles) of streets in poor condition and the backlog of deferred maintenance swelling to an estimated $860 million to $1 billion by 2020. If this occurs, it will be extremely difficult, if not virtually impossible, to bring the pavement network back into fair or good condition.

Recognizing the urgency and complexity of this matter, the study session is being held to begin addressing the pavement maintenance funding shortfalls and the associated maintenance backlogs through alternative funding.

The primary factors contributing to the City's pavement maintenance challenge are: the age of the City's streets (more than 2,000 miles of the City's streets are over 30 years old); a lack of funding for regular maintenance; and escalating costs for pavement maintenance. City funding for pavement maintenance has generally declined due to budget shortfalls over the past decade. Funding to the City from State and Federal gas tax sources has declined in their purchasing power as these revenues have not kept pace with inflation.

Currently estimated future revenues for City pavement maintenance are in the order of $10 million per year. City staff estimates that about $100 million per year is needed to achieve an overall good condition for City streets. The key strategies for addressing the City's pavement maintenance challenge are to strengthen advocacy for increased regional, State and Federal investment and to seek new local revenues.

Key Informational and Policy Questions for Consideration at the Study Session

1. What are the factors that have contributed to San José's current pavement maintenance conditions?
2. How does San José compare with other Silicon Valley and Bay Area jurisdictions?
3. What overall pavement condition and investment level is desired for San José streets and what type of actions will it take to avoid a significant increase in the backlog and the associated financial impact?
4. How can the City strengthen advocacy for increasing pavement maintenance funding from regional, State, and Federal sources?
5. How can the City facilitate community understanding and support for new local revenues?

BACKGROUND

Over the years, the Departments of Transportation (DOT) and Public Works (DPW) have consistently informed the City Council of annual funding shortfalls and growing backlogs for pavement maintenance and other infrastructure needs.

1997 Pavement Maintenance Recovery Plan

In 1997, a ten-year pavement maintenance recovery plan was adopted by the Council to eliminate the backlog of deferred pavement maintenance that existed at that time. The plan established regular preventive maintenance cycles for streets in fair or good condition and accounted for the needed rehabilitation work to improve streets in poor condition. Ninety-five percent of the funding needed to deliver the plan was obtained during its first five years, raising conditions from 84% of streets in fair or better condition in 1997 to 93% in 2002. Unfortunately, subsequent funding shortfalls beginning in 2002-2003 derailed the recovery plan, leading to a decline in pavement condition.

2007 Transportation Maintenance Master Plan

In 2007, DOT developed the Transportation Maintenance Master Plan (TMMP) that identified then current conditions and funding needs for transportation infrastructure, including pavement. The TMMP also provided results from a public survey that gauged the interest of likely voters in supporting a special tax for improving transportation infrastructure conditions. While the condition of the City's pavement network was identified as a concern by the public and was viewed as a high priority, only a 58% of voters indicated a willingness to support new or increased taxes for maintenance, short of the two-thirds threshold needed for approval of a special tax.

As a result of the TMMP and ongoing direction from the Transportation and Environment (T&E) Committee, DOT began researching alternative strategies to reverse the decline in infrastructure conditions and growing maintenance backlogs.

2010 Infrastructure Maintenance Needs Report

In May of 2010, DPW and DOT provided a comprehensive update to the T&E Committee on the City's Deferred Maintenance and Infrastructure Backlog. A one-time $788 million deferred maintenance backlog ($444 million in the General Fund) and a $45 million ongoing annual shortfall ($43 million in the General Fund) was reported. Approximately one-half of the Citywide one-time maintenance backlog needs and over two-thirds of the ongoing annual funding needs are specified for pavement maintenance, and given the unique attributes of pavement where deferring maintenance results in much higher costs in the future, it was concluded that addressing pavement maintenance funding needs is a priority. In addition, most other infrastructure assets have some type of special or dedicated funding source to support maintenance. The T&E Committee approved staff's recommendation to conduct the special pavement maintenance study session with the entire City Council, which was later approved by the Rules and Open Government Committee. See Attachment 1 for a chart describing the one-time backlog funding needs for all City infrastructure.

ANALYSIS

I. DEFINING THE PROBLEM

A. Current Pavement Conditions and Financial Impacts

The City utilizes a pavement management system adopted by the Metropolitan Transportation Commission for use by all Bay Area Region jurisdictions to provide critical information and analysis for managing their pavement maintenance programs. The system rates the condition of individual streets along with the average condition of all streets using a Pavement Condition Index (PCI) from zero to 100, with zero being a completely failed street to 100 being a new street in excellent condition. The figure below provides a general description of the PCI scale and the associated condition ratings. It also presents information on the current range of costs to

provide the proper maintenance treatment for one mile of pavement based upon its condition at the time of treatment. As pavement deteriorates, the cost to provide the proper maintenance treatment rises exponentially.

Pavement Condition Index Ratings

	Condition Ratings	Cost Per Mile of Maintenance for Pavement in Condition Ranges
100 70	**70-100 Good to Excellent**	**$35K - $70K per mile**
50	**50-69 Fair and At Risk**	**$85K - $110K per mile**
25	**26-49 Poor to Very Poor**	**$200K - $800K per mile**
0	**0-25 Failed**	**$800K - $1.8M per mile**

There are approximately 2,370 miles of streets in San José. The City's average condition rating for the entire street network is currently 64 PCI, or an overall rating of fair. Eighty-two percent of streets are rated in fair or better condition (50 PCI or above), which conversely means that 18%, or approximately 425 miles of streets, are in poor or worse condition. Attachment 2 provides photographs and information about streets within the various PCI categories. Appendix A lists all of the streets in the City that are currently in poor or worse condition.

In terms of the financial impacts related to the condition of the pavement network, the City has two significant issues. First, a $250 million backlog of deferred maintenance exists. This backlog is comprised of streets in poor condition needing costly resurfacing or reconstruction and streets in fair or better condition overdue for a prescribed preventive maintenance treatment. Second, the City has a projected ongoing annual funding shortfall of $20 million to $30 million just to meet the upcoming prescribed maintenance cycles to slow down natural pavement deterioration and minimize future maintenance costs. The annual shortfall does not address the funding necessary to eliminate the $250 million backlog of deferred maintenance and bring the pavement network into good condition, which is addressed later in this report.

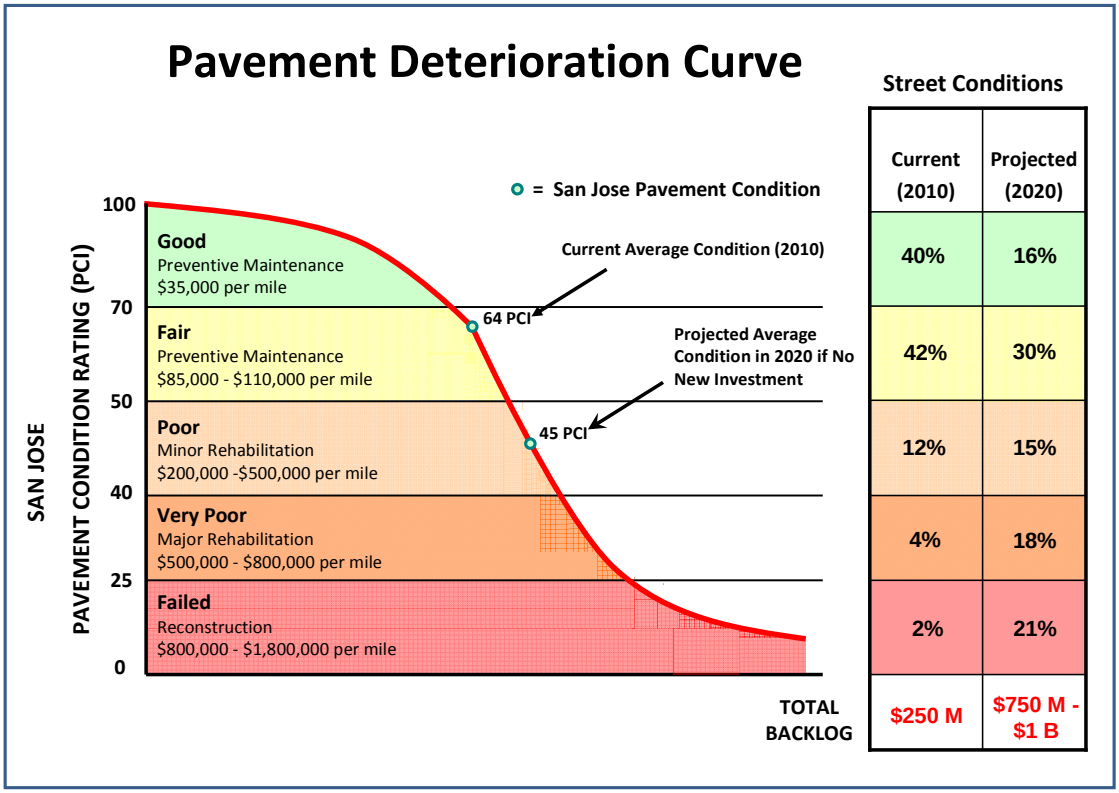
B. Future Pavement Conditions and Financial Impacts

Although the average 64 PCI means the overall network is generally rated in fair condition, it is also an indication of being "at risk" for rapid deterioration and much higher maintenance costs in the future if current maintenance needs are not immediately met. This predictable phenomenon, where deterioration occurs most rapidly once a street reaches fair condition and when regular and proper maintenance is not performed, is well understood in the transportation field.

Unfortunately, the ongoing funding levels that are projected for pavement maintenance over the next five years and beyond are well short of what will be needed to adequately perform the needed treatments, and the overall condition of the network will rapidly decline. It is projected that the average condition of the City's pavement network will fall to an overall rating of poor, or 45 PCI, by 2020. This means that approximately 1,275 miles – 54% of the City's streets – will be in poor condition and in need of resurfacing or reconstruction at a cost roughly five to ten times the cost of preventive maintenance.

Equally concerning is that the backlog of deferred maintenance needs will swell to approximately $860 million by 2020 due to a much higher costs for rehabilitating streets in poor condition. Unless additional and fairly immediate investments are made on pavement maintenance to avoid reaching the projected backlog, it will be virtually impossible for the pavement network to recover under any reasonable funding scenario due to the financial burden it would place on the City and the community for many years. An $860 million backlog would likely cost $3 billion or more to eliminate, and could cost well over $1,000 per year per household/parcel to fund.

The chart below illustrates how the City's pavement network is on the verge of rapid deterioration and higher maintenance costs in the future if additional funding is not obtained:



C. How Did San José Get to this Point?

There are several factors that have brought the City's pavement network to the point where it is now, but four reasons stand out as the most consequential: (1) the age of the City's streets, (2) the lack of maintenance funding that leads to (3) inadequate regular maintenance over time, and (4) escalating costs for pavement maintenance.

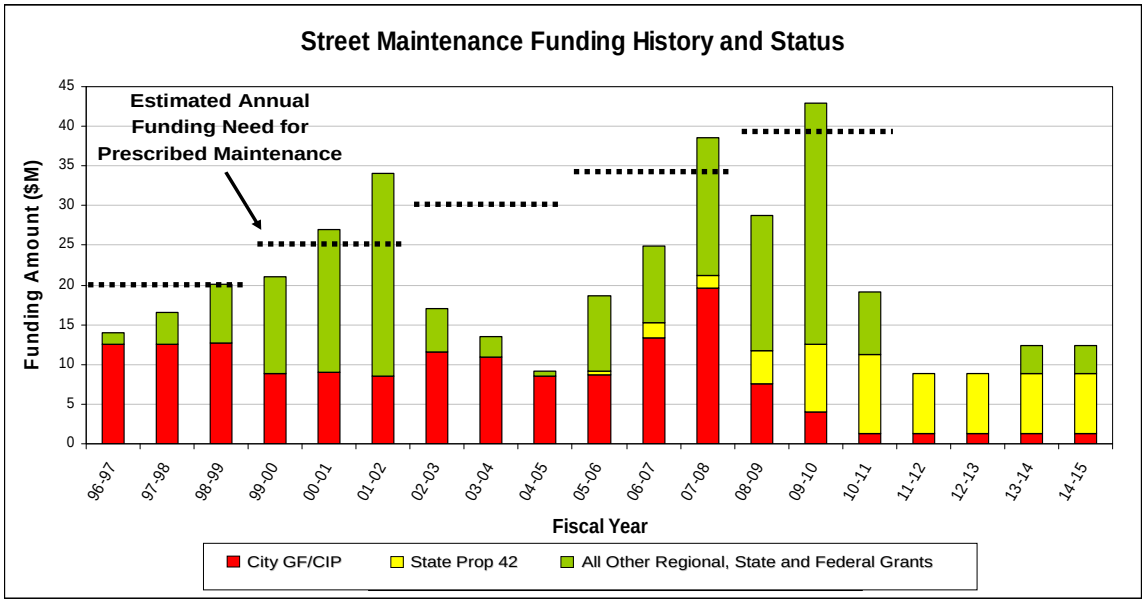
1. Aging Infrastructure

A typical street will naturally deteriorate without regular maintenance in 25 to 30 years, depending on various factors such as soil conditions, traffic volumes, and loads. With the rapid growth and expansion of the City occurring during the 1950's, 1960's and 1970's, a large portion of the City's streets have reached or are approaching the end of their useful life and are now in need of costly rehabilitation. San José has over 2,000 miles of streets that are 30 years old or older. The table below provides the average years for when streets were built throughout the City:

Average Construction Years	Council District
1940's	District 3
1950's	Districts 1, 5, and 6
1960's	Districts 7 and 9
1970's	Districts 2, 4, 8, and 10

2. Lack of Funding for Pavement Maintenance

The life of a street can be extended by 20 years or more if proper maintenance is performed at appropriate intervals. Unfortunately, the annual funding levels required to perform proper maintenance was achieved only five times in the last 15 years. Funding levels were not researched prior to 1997, but the amount of maintenance performed before then clearly indicates that annual funding levels were not commensurate with the amounts needed. The chart below illustrates the funding levels achieved compared to the annual amount needed since the ten-year recovery plan was adopted in 1997.



When the ten-year recovery plan was initiated, the majority of the Pavement Maintenance Program was funded by City General Fund (GF) and Capital Improvement Program (CIP) sources. In early 2000, the passage of Measure A/B and the allocation of funds from the Federal Transportation Bill and State Traffic Congestion Relief Program more than offset reductions in the City's local investments. As the State and Federal funding sources were exhausted, the local economy continued to struggle and funding for Pavement Maintenance reached a low point in 2004-2005. Beginning in 2005-2006, funding from State Proposition 42 and the next Federal Transportation Bill (SAFETEA-LU) started, and for two years in 2006-2007 and 2007-2008, the City supplemented General Fund investments with one-time funding from the Ending Fund Balance and backlog reduction reserves. Reductions in the City's General Fund and CIP continued in 2008-2009 and 2009-2010, however ongoing funding from State Proposition 42 and one-time funding from State Proposition 1B and the American Recovery and Reinvestment Act provided additional resources.

Overall, the funding chart demonstrates how the City's local investments for pavement maintenance through the General Fund and Capital Improvement Program have trended downward over time. It also shows how one-time regional, State and Federal funding fluctuates. The result from both of these issues is large gaps in meeting annual funding needs that limit the amount of maintenance performed on the pavement network.

3. Lack of Regular Pavement Maintenance

The amount of annual prescribed maintenance needed to preserve the condition of the pavement network and minimize future maintenance costs was established as part of the ten-year recovery plan and based on industry accepted treatment practices and frequencies. The City's prescribed maintenance program is to perform treatments on arterial and residential streets every eight and ten years, respectively. The frequencies established by the City were

based on the upper limits recommended by the pavement industry and in recognition of the City's funding capacity to provide other service needs, such as public safety, parks, and libraries. For example, a typical surface seal performed on an arterial road has an average life time of four to six years, with eight years being the maximum life time achieved in some cases. The City chose to use eight years as the prescribed surface seal treatment cycle for arterial roads realizing that more frequent maintenance was not financially achievable.

To obtain these cycles, the City would need to perform approximately 250 miles of maintenance every year. The table below describes how this amount was calculated:

Street Type	No. of Miles in City	Maintenance Cycle for Each Street	No. of Miles Maintained Annually
Residential	1,570	10 years	157
Arterial	800	8 years	100
	2,370		**257 miles**

The City performed on average about 100 miles of maintenance each year since FY 2000-2001, well short of the prescribed 250 miles and thus deferring, or in most cases, completely skipping maintenance treatments on a large number of streets. As a result, adequate maintenance was not performed, pavement deterioration was accelerated, and more costly treatments are now required. The following are two representative examples of streets that were built as the City was expanding, did not receive proper preventive maintenance, and are now in poor condition and in need of a costly resurfacing.

Arterial Street

- Constructed in 1966
- Surface Sealed in 1983 (17 year cycle)
- Surface Sealed in 1998 (15 year cycle)
- Currently in poor condition (47 PCI) and in need of resurfacing

Residential Street

- Constructed in 1963
- Surface Sealed in 1982 (19 year cycle)
- Surface Sealed in 1997 (15 year cycle)
- Currently in poor condition (44 PCI) and in need of resurfacing

4. Escalating Costs for Pavement Maintenance

The funding chart in subsection C2 above illustrates the amount of annual funding needed to perform prescribed maintenance. The escalation in the annual funding need from $20 million in 1996 to $39 million today is greatly driven by the escalating costs of materials and labor for pavement maintenance activities. The California Statewide Local Streets and Roads Needs Assessment study recently completed by the League of California Cities reported that asphalt concrete costs – which are typically greater than half the cost of a project – have risen 7.1 % each year on average since 1998. This, coupled with the higher costs associated with needing to perform more extensive and costly treatments as pavement conditions decline, makes solving the pavement maintenance problem extremely challenging.

D. Comparison of San José with Other Cities

The condition of the City's pavement network is the lowest in Santa Clara County with a 64 PCI. Only one other jurisdiction – Monte Sereno – has an overall PCI rating below 70. When compared to all other Bay Area cities, San José is ranked within the lowest 25%. However, San José is not alone with our challenges when compared to other larger metropolitan cities like San Francisco and Oakland. A sample listing of pavement conditions for other Bay Area jurisdictions is provided in Attachment 3.

To reinforce the perspective that funding is one of the primary factors contributing to the current condition and future projections for the City's pavement network, consider a recent study performed by the MTC on pavement maintenance investments made by the jurisdictions within Santa Clara County. The study compared the average annual investment of each jurisdiction over the five year period from 2006 through 2010. While San José has the lowest PCI in the County, it also invested the least amount of money per lane mile for maintenance of any

jurisdiction at $2,073 per lane mile. The table below provides a sample of the data, including the lowest and highest rated jurisdictions in terms of both PCI and average annual investment:

Jurisdiction	Condition		Investment	
	PCI	Ranking (1-16)	Ave per lane mile	Ranking (1-16)
Los Altos	83	1	$19,000	7
Santa Clara	82	2	$23,678	2
Los Altos Hills	76	4	$23,798	1
Milpitas	70	14	$5,818	14
San José	64	16	$2,073	16

E. Efficient Use of Available Pavement Maintenance Funding

While it is important to understand that age and funding are the major issues that have caused the backlog of maintenance, it is also important to recognize that the City has been proactive in implementing cost-effective maintenance strategies to stretch the limited resources that are allocated to pavement maintenance. The City began utilizing sophisticated management and technology systems to assess the pavement network and determine the most cost effective use of pavement maintenance resources well before they became industry standards. Given the scope and conditions of different segments of the pavement network, utilizing tailored maintenance treatments for each segment is a necessity to ensuring the most efficient use of resources.

Furthermore, the delivery of the City's pavement program has been organized in a way to utilize the most efficient elements of in-house maintenance work and competitively bid private maintenance contracts. City maintenance crews have responsibility for immediate pothole repair, larger scheduled corrective maintenance service requests, and residential street sealing. At the end of the construction season, some pavement maintenance crews are re-deployed to perform storm drain inlet cleaning and storm response during winter storms ensuring efficient utilization of crews on a year around basis with alternate funding sources.

All other pavement projects have a strictly seasonal and project nature, including slurry seal and resurfacing of major streets, and are performed by private contractors through competitive bids at the lowest possible cost. For comparison purposes in a typical year, in-house engineering and maintenance costs are approximately $5 million. In a historically robust funding year like 2010 ($43 million), the level of in-house expense is approximately 12% of total program costs ($5 of $43 million). In leaner years, like those currently projected over the next four years, the level of in-house expense may approach approximately half the total investment ($5 of $10 million). Under any future scenario of significantly increased investment, it is expected that the vast majority of investment would be incurred by private contractors through competitive bids.

F. Source and Use of City's Current Transportation Revenues

The General Fund receives approximately $41.6 million annually in transportation-related revenues comprised mainly of State Gas Tax ($16.6 million), Prop. 42 ($9 million), Parking Fines ($10.7 million), and Special Fund transfers ($1.83 million). Of the $41.6 million in revenue, approximately $40.2 million of that revenue is expended each year on transportation-related activities, such as pavement maintenance, roadway markings and traffic sign maintenance, traffic signal and streetlight maintenance, electricity for traffic signals and streetlights, landscape maintenance, traffic safety services, traffic signal timing and troubleshooting, on-street parking, transportation planning, and strategic support. Although pavement maintenance receives the largest portion of City transportation investment, it is important to recognize the allocation of the limited funds to other transportation activities is necessary to ensure a safe and efficient transportation system.

G. Attributes Affecting San José's Pavement Conditions

The local San José community is fortunate to have many attributes that make it a desirable place to live, work and play. Keeping the City's infrastructure in good condition enhances those attributes. Unfortunately, these and many other attributes of San José make it difficult to support proper levels of infrastructure maintenance, especially pavement maintenance.

The San José community with its large tracts of residential neighborhoods and less than optimum retail, commercial and industrial land uses does not have the tax and revenue base to invest in the level of services and infrastructure maintenance that is needed to properly sustain the community. The well documented jobs to housing imbalance contribute to a weaker tax and revenue base in San José, particularly when compared to other cities in the valley including Santa Clara, Sunnyvale and Mountain View. That imbalance, and the associated tax base, is evident in the comparable level of investment in pavement maintenance and in actual street conditions. The limited revenue base in San José has contributed to long term insufficient investment in pavement maintenance, resulting in streets that have prematurely deteriorated.

The patterns and timing of development in San José have also contributed significantly to San José's current pavement conditions. A sprawling suburban city with a large arterial street network and vast tracks of low density residential neighborhoods have created a large street inventory (2,370 miles) that requires significant and consistent investment to properly maintain. The vast majority of the development (and street construction) occurred in the 1950s, 1960s, and 1970s, resulting in streets that are due or past due for major resurfacing.

The establishment of large redevelopment project areas in the City has lowered the amount of property taxes that would have been and currently are available for basic maintenance activities to provide more local resources for redevelopment and other capital development purposes. The State of California's public finance system, including Proposition 218, have made it more difficult for cities to achieve the level of voter support (a two-thirds supermajority) to augment traditional local revenue sources with special taxes to properly fund pavement maintenance. When Santa Clara County did pursue transportation specific measures requiring two-thirds voter

approval, the priority of the measures focused mostly on regional highway and transit development and not local road maintenance. Other counties in the State that have met the two-thirds voter approval threshold for their transportation measures have dedicated more of that funding to local pavement maintenance than has occurred in Santa Clara County.

The geographic development patterns and the demand on the street system have also contributed to San José's poor pavement conditions. The concentration of VTA bus routes in San José as compared to other cities in the valley literally places heavier loads on San José's street network, contributing additional wear and tear. Garbage and recycling truck traffic place heavy demands on San Jose's street system, and with current State law it is not possible to recoup the added maintenance cost caused by these trucks.

On the positive side, San José's seasonable and relatively arid climate does not subject our streets to the freeze and thaw cycle and drier climates result in less rainwater infiltration into street base foundations. The extensive community forest and tree canopy provides shade to streets during extreme summer temperatures minimizing the evaporation of asphalt oils, which slows the process of pavement surfaces from becoming dry, brittle and cracked.

H. Financial, Economic and Social Value of Streets

The City's pavement network has an estimated replacement cost of $4.2 billion, making it one of the most financially valuable assets owned by the City. More important, though, is the prominent role that streets perform in how the City functions. Approximately 20% of the land area in the City is paved streets. These streets enable children to get to school, adults to go to work, access for emergency vehicles, and services to be provided to our homes. Streets even play a role in our social lives, giving neighborhoods a place to gather and for kids to play. Additionally, a well maintained street network system is critical to the City's economy by helping businesses serve their customers and transport goods and services.

On the other hand, poorly maintained streets have a negative impact on our City and its prosperity. Streets in poor condition look blighted and can make a community appear rundown and neglected. Poorly maintained streets do not encourage alternate forms of travel, such as walking and cycling. Streets in poor condition are also known to cause higher vehicle costs for motorists. The National transportation group, TRIP, issued a report on September 22, 2010 titled *Hold the Wheel Steady: America's Roughest Rides and Strategies to Make our Roads Smooth.* TRIP concluded that rough road conditions in the San José urban area are costing motorists $756 per year in additional vehicle maintenance, repair, and fuel costs. With such significant financial and social impacts, focusing on preserving the City's pavement infrastructure needs to be a priority to help achieve the vision of making San José the best place to live, work, and play.

II. DETERMINING THE GOAL AND DIRECTION

A. Alternative Investment Levels and Pavement Condition Outcomes

Over the years, DOT has consistently reported to the City Council the annual funding shortfalls and growing pavement maintenance backlogs. In the most recent reports, and during the FY 2010-2011 budget process, the annual funding need for pavement maintenance was $39 million with an average projected shortfall of $20 to $30 million. The $39 million in annual funding is needed to perform prescribed maintenance cycles on streets in need of preventive maintenance and a limited amount of resurfacing work on aging and deteriorating streets in order to best preserve the condition of the overall network and prevent further growth of the maintenance backlog. The existing backlog of deferred maintenance ($250 million) requires separate funding to be reduced or eliminated, and it is not an element of the $39 million annual prescribed maintenance need.

In preparation for this study session, DOT performed its most extensive analysis of the pavement network to date to evaluate several funding scenarios with the intent to determine what it would take in terms of investment over a ten year period to slow the growth of the backlog, sustain the current backlog (not get any worse), improve pavement conditions and reduce the backlog, and to fully eliminate the backlog and achieve a network where all streets are in good condition. The following table lists these scenarios:

Scenario	Annual Investment ($M)	Conditions After 10-Year Investment		
		PCI	One-Time Backlog ($M)	% of Streets in Poor or Worse Condition
1	Current ($10+)	45	$860	54%
2	$20	49	$775	47%
3	$40	55	$600	36%
4	$60	61	$400	26%
5	$80	67	$250	15%
6	$100	70	$170	10%
7	$130	75	$0	0%
Today (2010)		64	$250	18%

The following provides a brief description of how each scenario would impact maintenance activity, pavement conditions, the deferred maintenance backlog, and the associated long-term financial implications of the backlogs:

- **Scenarios 1 and 2 ($10 to $20M Annual Investment) –** Essentially remaining at current or slightly increased funding levels would provide only a negligible amount of treatment and allow the rapid deterioration of the pavement network to continue. In ten years, a backlog of

$775 million or greater would be extremely difficult, if not impossible, to overcome in a reasonable time period.

- **Scenario 3 ($40M Annual Investment) –** This would enable prescribed preventive maintenance cycles to be met, but in order to accomplish that, work to reduce the backlog would not occur and those streets would continue to decline. Additionally, aging streets would begin falling into poor condition further eroding network conditions and increasing the backlog even with preventive maintenance occurring. Recovery from the backlog would be unlikely.
- **Scenario 4 ($60M Annual Investment)** – This would allow prescribed maintenance to occur along with some degree of rehabilitation on streets already in poor condition. Overall condition would continue to decline, but the growth of the backlog would be slowed down with recovery into the future difficult, but possible.
- **Scenario 5 ($80M Annual Investment) –** This would provide for substantial maintenance and rehabilitation to occur, halting the growth of the backlog and raising the overall condition of the pavement network. Recovery would be obtainable with increasing investments over time after the initial ten year period.
- **Scenario 6 ($100M Annual Investment) –** This would enable a full maintenance program that could systematically and efficiently improve the overall pavement network to good condition (70 PCI) and reduce the backlog significantly. It would also make full recovery likely with similar or slightly less on-going investments past the initial ten-year investment period.
- **Scenario 7 ($130M Annual Investment) –** This would fully eliminate the backlog and raise the overall condition of the pavement network to a solid good condition at 75 PCI, putting San José among the best in the region. After the initial ten-year recovery period, sustaining the condition on the network would be achievable by implementing a regular maintenance cycle at a significantly reduced annual investment level.

B. Funding and Pavement Condition Goals for Consideration

The alternative scenarios described above provide a range of choices and goals for the City Council to consider and to ultimately provide direction to staff to pursue. Important factors for the City Council to consider in its deliberations on these scenarios include:

- What type of street conditions are desired, expected or are acceptable within the community?
- At what point in time, and in terms of magnitude of the problem, would the City have the best opportunity to solve the problem (are pavement conditions poor enough for the community to support a special tax in the near future)? If delay occurs in addressing current pavement conditions would the problem become so large that it will extend beyond the capacity of the community to solve (e.g. backlog grows to $600 to $860 million range)?
- All levels of increased investment slow network deterioration and reduce future costs.

The $60 and $80 million annual investment scenarios each have desirable elements with the most important being that increased levels of investment today reduce future maintenance costs. The $60 million investment scenario's largest benefit is that the growth in the estimated cost to eliminate the backlog in ten years would be dramatically lower than if the current level of funding continued ($400M versus $860M) and the average PCI of the network would have only dropped to 61, not much lower than the current 64. The $80 million investment scenario's largest benefit is that no growth is estimated in the cost to eliminate the backlog in ten years and the average PCI of the network would improve over today's conditions from 64 to 67.

The $100 million Investment Scenario is also an appropriate goal to consider for several reasons:

First and foremost, a $100 million annual investment establishes a course to eliminate the maintenance backlog, provide quality streets, and avoid a financial crisis that would be virtually impossible to overcome with any reasonable level of investment. Investing less than $80 million per year will leave the City, the community, and our successors with a maintenance backlog that would require billions of dollars to address. The current $250 million backlog will require a ten-year investment of $1 billion to be on the path to recovery. Using the same backlog to recovery ratio as just described above, a $400 million to $860 million backlog that will develop within ten years from any scenario funded below $80 million would require at least $1.6 billion to $3.4 billion in total investment in years 10 to 20 to approach eliminating the backlog. When put into financial terms for the community, these backlogs would likely require an average cost of approximately $700 to $1,400 per year per household/parcel for ten years to address. Given previous community outreach, it seems unlikely that the necessary level of support could be achieved for that level of investment.

Conversely, investing $100 million over ten years would require an average annual investment per household/parcel of approximately $400 if the entire solution was to be locally funded (assuming no differentiation based upon type of parcel e.g. residential, commercial or industrial). Recognizing that $400 per year is a high level of investment for the community as well, it could be reduced to more reasonable levels by implementing funding solutions that call for increased levels of regional, State and Federal investments. Staff would also recommend that the rate of any local parcel based tax be differentiated based upon the land use and the demands that the land uses place on the street system (e.g. commercial/industrial uses place greater demands on street system than residential uses and as a result residential uses should pay a corresponding lower amount).

Second, this scenario recognizes the value and importance of streets to the community and the economy by providing serviceable streets in good condition. An overall 70 PCI puts over 90% of streets in fair or better condition, positioning San José as a quality place to live, work and do business, thus contributing to our long term competitiveness in the region. Any investment less than $100 million annually does not raise the overall condition of the pavement network to a good condition and maintains San José's position as the worst in the County and in the lower 25% of the Bay Area.

Third, it enables the implementation of a sustainable preventive maintenance program at reduced investment levels once the initial 10 year investment period has been completed. Lesser funded scenarios would require higher ongoing investments in future years just to slow or stop the decline in pavement network condition and backlog growth.

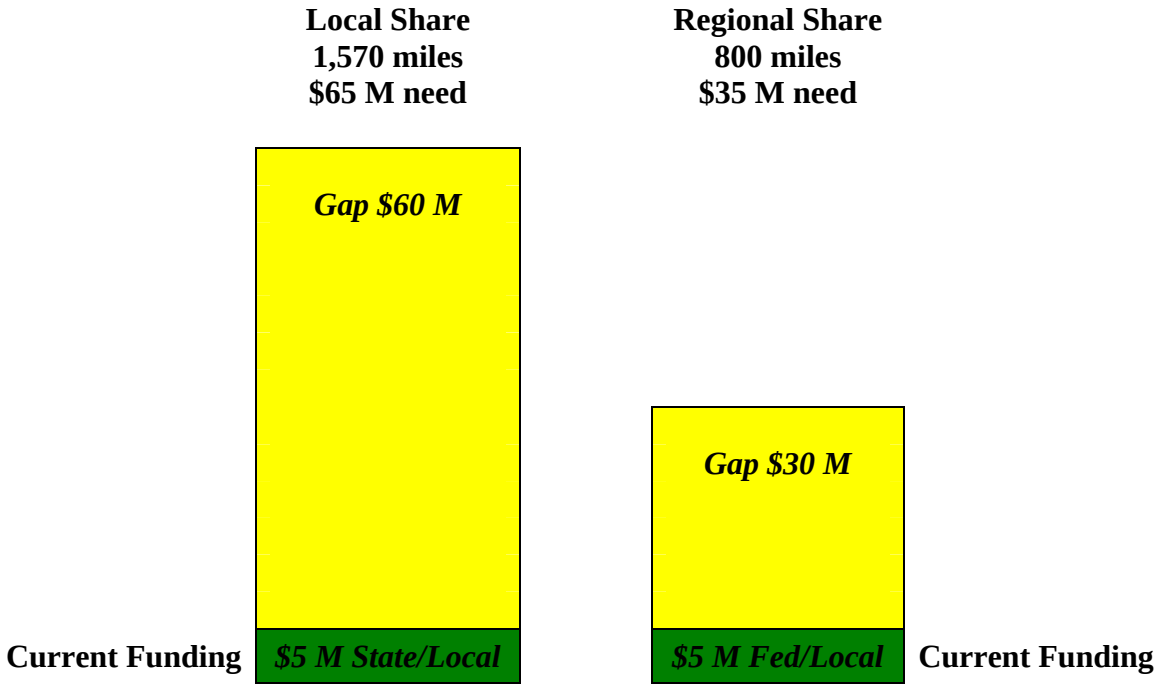
Fourth, investing $100 million per year for ten years establishes pavement as a basic and necessary utility, placing it on-par with other critical infrastructure and utility services, such as sanitary and storm sewers, garbage and recycling, and other basic needs.

C. Split of Investment for Major Streets and Local Streets to Reach Funding Goal

As described above, achieving a $100 million investment goal requires increased levels of local and regional, State and Federal investment. The appropriate splits of investment to achieve the $100 million annual investment goal should be based upon the following considerations:

- The ability of certain types of streets to receive maintenance from different funding sources is limited based upon granting agency eligibility requirements. For example, Federal funds are only authorized to be used on the Federal Aid System (major streets).
- Level of interest and commitment from regional, State, Federal agencies to pursue increased funding is typically limited to maintenance on the major street system that serves a regional purpose as opposed to streets serving a local and residential purpose.
- San José's 2,370 mile street system consists of 1,570 miles of residential streets and 800 miles of arterial streets (30 ft equivalents) – about a two-thirds to one-third ratio.
- From a regional (VTA) and State perspective, many local communities are investing sufficient local funds to maintain their street system in acceptable condition. The fact that San José has the worst rated streets in the County and is in lower 25% of the Bay Area, indicates that the level of investment needed in San José is higher than in other local jurisdictions, reducing the likelihood that regional or State agencies will feel the pressure or see it as a priority to solve the pavement maintenance problem for major as well as minor/residential streets.

Based upon this information, the City should consider pursuing a strategy that seeks approximately a two-thirds to one-third ratio of local investment to regional, State and Federal investment. Using the $100 million investment goal, that would translate to an approximate $65 million local investment and a $35 million regional, State and Federal investment. The graph below illustrates the proportional shares and the current gaps in investment:



III. IDENTIFYING REGIONAL, STATE, AND FEDERAL SOLUTIONS

Assuming an investment goal of $100 million annually for pavement maintenance, a funding target of $35 million annually from regional, State and Federal sources is suggested to cover the cost of the City's 800 miles of major streets (arterial and collectors), roughly one-third of the City's streets. This section of the report identifies various current efforts to seek increased regional, State, and Federal funding for pavement maintenance. The section concludes with a proposed advocacy agenda to help reach the $35 million funding goal.

A. San José's Legislative Guiding Principles

The City's Legislative Guiding Principles already include several actions focused on seeking or facilitating increased investment for pavement maintenance, as summarized below.

- Protect transportation funding for the maintenance of local streets.
- Provide transportation investment to preserve existing facilities.
- Support authorization efforts of the Federal Transportation bill that include maintaining the current transportation system ("Fix it First / State of Good Repair").
- Support legislation to reduce the approval of taxes for transportation and infrastructure funding measures to less than a 2/3rds majority.

B. VTA's Local Transportation Investment Program (Measure B)

The Santa Clara Valley Transportation Authority (VTA) has initiated Measure B on the November 2010 ballot asking voters to approve a $10 increase in the vehicle registration fee in Santa Clara County to provide funding for street maintenance and traffic operations. If approved by a majority vote, it is estimated the City could receive $5.3 million annually that the City Council could allocate for pavement maintenance.

C. MTC's Strategic Plan for Roadway Infrastructure Maintenance

The Metropolitan Transportation Commission (MTC) has a Local Streets and Roads Working Group that is preparing an update to their 2007 Saving our Streets (SOS) plan. San José DOT staff actively participates with this regional group of Bay Area transportation and public works officials. The key initiatives being promoted are:

- Improve Bay Area's local streets to a PCI of 75.
- Secure annual pavement maintenance funding in the amount of $23,000 per lane-mile.
- Seek new funding from a $0.35 gas tax increase or other equivalent sources.
- Consider new funding sources such as: mileage taxes, transportation utility fees, vehicle registration fees, local sales taxes, parcel taxes, vehicle impact fees, and local assessment districts. All such programs could be better facilitated with State legislative reform related to the generation of transportation fees and taxes.

D. League of California Cities Local Streets Assessment

In October 2009, the League of California Cities (LCC) commissioned the California Statewide Local Streets and Roads Needs Assessment report. The key findings of the report are:

- 81% of the state's roads are owned and operated by cities and counties.
- California's local street and road system is reaching a point of crisis and has an overall PCI rating of 68. Based on current funding levels, California local streets will deteriorate to a PCI of 58 in 10 years and to 48 by 2033.
- Since 1998, asphalt prices increased by an average of 7.1% annually and has contributed to increased maintenance costs and a widespread deferral of maintenance.
- New investment is needed at a level equivalent to a $0.38 gas tax per gallon increase or a $0.50 daily fee per average driver.

E. Federal Transportation Legislation

The most recent comprehensive Federal transportation funding program (SAFTEA-LU) expired in September 2009. Since then, Federal Transportation funds have been allocated through special programs like the Federal Recovery Act and other one-time grant programs. San José has already received $15 million in Federal pavement maintenance funds in 2010 and on September 28th, the City Council authorized a grant application for an additional $8 million in one-time funds for the 2011 summer construction season. In 2007, Congress commissioned a National Surface Transportation Revenue and Study Commission that issued a report recommending increased investment in existing transportation infrastructure (Fix it First) and suggesting a $0.40 increase in the Federal gas tax (up from the current $0.18 per gallon tax that has not been increased since 1993). In September 2010, the Obama Administration proposed a $50 billion near-term investment in transportation that includes funds for "rebuilding roads" and providing "much-needed jobs". These last two initiatives remain in the developmental stage with no clear indication of the timing or likelihood of further action, which emphasizes the needs for local, regional and State action on this issue.

F. San Francisco Street Maintenance Funding Study

In July 2010, the City and County of San Francisco issued a report titled "Between a Pothole and a Hard Place: Funding Options for San Francisco's Street Resurfacing Program". A copy of the report is provided as Appendix B. The key findings of the report are:

- The condition of San Francisco streets is declining due to underfunded preventative maintenance. Current overall PCI rating is 63 ("fair" condition) for their 2,112 lane-miles of streets.
- 49% of streets now require more expensive resurfacing or reconstruction.
- A $751 million investment is needed over next decade to achieve a PCI goal of 70.
- A new 10-year investment of $210 million from the city's General Fund is proposed.
- 17 other new funding alternatives were evaluated and the most viable options were determined to be: Vehicle Registration Fees (majority approval for $10 annual increase), a Conditional General Tax (majority approval for sales, business and/or utility tax), citywide Benefit Assessment District, and Parcel Tax (requires two-thirds approval).
- Continue work on long-term legislative solutions with a focus on lowering voter approval threshold, congestion pricing, and raising gas tax.
- Conduct public outreach on proposed new revenue sources.
- Priority for street maintenance is given to transit and bicycle routes.

G. Summary of Proposed Actions for Advocacy at Regional, State and Federal Levels

In summary, there is significant discussion occurring at the regional, State, and Federal levels, and with other large cities that clearly recognize the need for increased investment for pavement maintenance. To help facilitate progress with seeking new pavement maintenance revenue, the following policy actions are suggested:

1. Continue to support VTA's Measure B on the November 2010 ballot. The City Council adopted a position of support on September 28, 2010.
2. Create partnerships with San Francisco, Oakland, MTC and the League of California Cities to introduce and secure passage of State legislation to enable majority approval of local transportation fees and taxes to fund pavement maintenance.
3. Elevate priority of Federal advocacy to increase near-term transportation investment for maintaining and rehabilitating City streets.

IV. IDENTIFYING SOLUTIONS FROM LOCAL SOURCES

Again, assuming an investment goal of $100 million annually for pavement maintenance, a funding target of $65 million annually from local sources is suggested to cover the cost of the City's 1,570 miles of local streets, roughly two-thirds of the City's streets. This section of the report identifies the City's best options for seeking increased local funding for pavement maintenance. The section concludes with a proposed advocacy agenda to help reach the $65 million annual funding goal.

A. Local Funding Options Studied

The 2007 TMMP provided results from a public survey that gauged the interest of likely voters in supporting a special tax for improving transportation infrastructure conditions. While the condition of the City's pavement network was identified as a concern by the public and was viewed as a high priority, only a 58% of voters indicated a willingness to support new or increased taxes for maintenance, short of the two-thirds threshold needed for approval of a special tax. As a result of these findings, DOT worked with the Attorney's Office, Public Works, Finance, and private consultants to thoroughly evaluate various alternatives for raising revenues for pavement maintenance. These alternatives included property-based user fees, benefit assessment and community facilities districts, pavement impact fees, and others.

It was concluded that any new local taxes, fees, or assessment specifically for pavement maintenance are subject to a two-thirds voter approval requirement under Proposition 218, eliminating from consideration many of the alternatives reviewed. Attachment 4 provides a more detailed summary of the key alternatives that were considered and are not being recommended.

The use of bond financing is also an alternative to more efficiently utilize investments and reduce the financial impact of escalating maintenance costs and will be considered in the future as a funding solution comes into better focus.

B. Consider a Parcel Tax for Increased Local Funding

Potentially the best available funding option for new revenues for pavement maintenance is a Citywide parcel tax. This special tax would require two-thirds voter approval, but would eliminate the concerns related to Proposition 218 and other State laws associated with most of the other funding alternatives specific to pavement maintenance.

Raising $65 million per year would cost on average approximately $300 annually per parcel, or $25 per month, assuming no differentiation based upon type of parcel (e.g. residential, commercial or industrial). If a parcel tax was pursued, staff would likely recommend that the rate of any local parcel based tax be differentiated based upon the land use and the demands that the land uses place on the street system, thus reducing the annual amounts for residential properties and increasing the amounts for other land use types.

While $300 per year ($25 per month) is not a small investment for any property owner, when compared against the costs for other basic infrastructure and utility needs, it appears to be well within or below the range of current property owner investments:

- A single family residence pays approximately $460 per year ($38 per month) for sanitary and storm sewer fees.
- A household pays approximately $310 per year ($25.90 per month) for the minimum level of garbage and recycling collection service.
- Basic cable service costs $480 per year ($40 per month), but many residents pay much more for added services.

Additionally, investing $300 per year to improve the City's pavement conditions may actually reduce some costs to the community. As described previously, the report recently released by TRIP concluded that rough roads in the San José urban area cost motorists an additional $756 per year in vehicle maintenance, repair, and fuel costs. For less than $300, San José residents may see a reduction in expenditures for vehicle repair caused by poor roadway conditions.

C. Possible Additions to a Local Funding Solution

Recognizing the importance of other infrastructure to the livability, vitality, and sustainability of the City, additions to a pavement maintenance funding solution could be considered. For example, increasing a parcel tax measure for pavement from $300 annually to $400 annually could also include trail enhancements and on-street bicycle improvements, street tree maintenance, and/or low energy street light conversions. A "Sustainable Streets and Trails" program would support three Green Vision goals. Grants for sidewalk repairs or other service priorities could be evaluated.

CONCLUSIONS AND NEXT STEPS

Streets are one of the basic City services used by all San José residents, businesses and visitors. A well-maintained street system is vital to the safety, economic health, and livability of the community. The condition of San José's 2,370 miles of streets is in a critical state and proactive steps need to be taken. The combined issues of aging streets, escalating costs, and declining investment are creating a potential for over half of San José's streets to degrade to a poor condition and require a nearly $1 billion investment for rehabilitation.

This report outlines suggested actions for advocacy at the regional, State, and Federal levels, as well as local actions to help significantly increase investment for maintaining San José's streets.

It is clearly understood by staff that the City Council and the community as a whole are faced with a series of major policy challenges, including the structural deficit, and that this issue needs to be considered and advanced within that context. We are also cognizant that the City Council, the community, and the Administration have made the point that this issue is at a stage where it should move beyond study and towards practical problem solving and action.

In terms of next steps, the following actions are suggested for City Council consideration and direction to staff.

1. **Set a Condition and Funding Goal for the City to Pursue** – A range of investment scenarios has been presented to the City Council as a way to achieve various condition goals. Establishing the goal will enable staff to develop a workplan aimed at achieving City Council preferences and direction.
2. **Educate and Inform Key Stakeholders** – This would include approaches such as convening a task force of community and business leaders, supported by staff, to strengthen regional, State and Federal funding advocacy and to refine the direction to pursue increased local funding investment. It could also include community information meetings similar in nature to the budget meetings held throughout the City to build understanding of the City's finances.
3. **Survey To Understand and Engage Community Support** – Initiate targeted community survey work to better understand community awareness of pavement maintenance conditions and funding, the potential consequences of inaction, and the level of interest in supporting increased local investment in pavement maintenance.
4. **Monitor Progress** – Direct staff to provide periodic status reports on pavement maintenance to the Transportation and Environment Committee and, as needed, to the full City Council.
5. **Target a Decision Making Point** – As with the Structural Deficit Elimination Plan, significant policy goals have had target dates for City Council decision making, even if the decision is ultimately a "go-no go" decision. Staff would anticipate that the earliest date would be in 2011, but depending upon future election cycles may be in 2012.

PUBLIC OUTREACH/INTEREST

Notification of the City Council Study Session and this report has been posted on the City's website.

- ❑ **Criterion 1**: Requires Council action on the use of public funds equal to $1 million or greater. **(Required: Website Posting)**
- ❑ **Criterion 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**
- ❑ **Criterion 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

COORDINATION

This report has been coordinated with the City Manager's Office, the Department of Public Works, and the City Attorney's Office.

CEQA

Not a project, File No. PP10-069 (a), City organizational and administrative activities

/s/

HANS F. LARSEN
Acting Director of Transportation

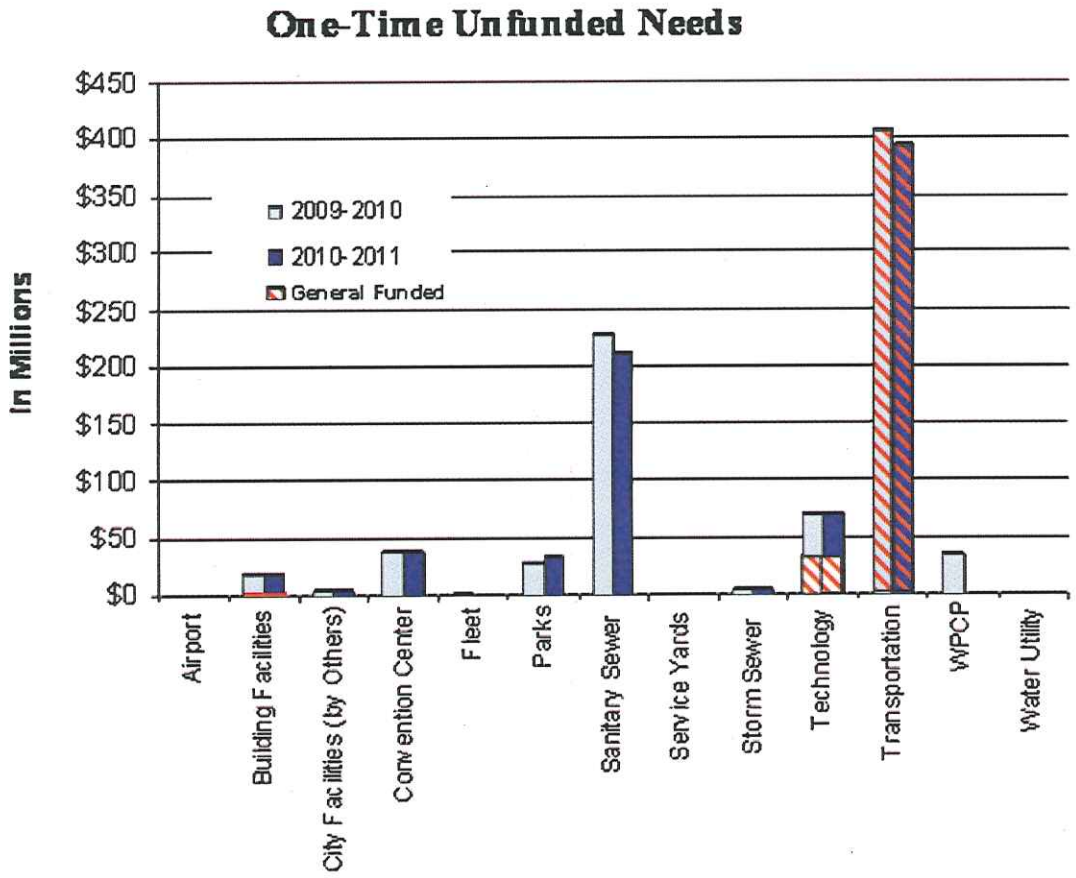
For questions please contact Hans Larsen at (408) 535-3835.

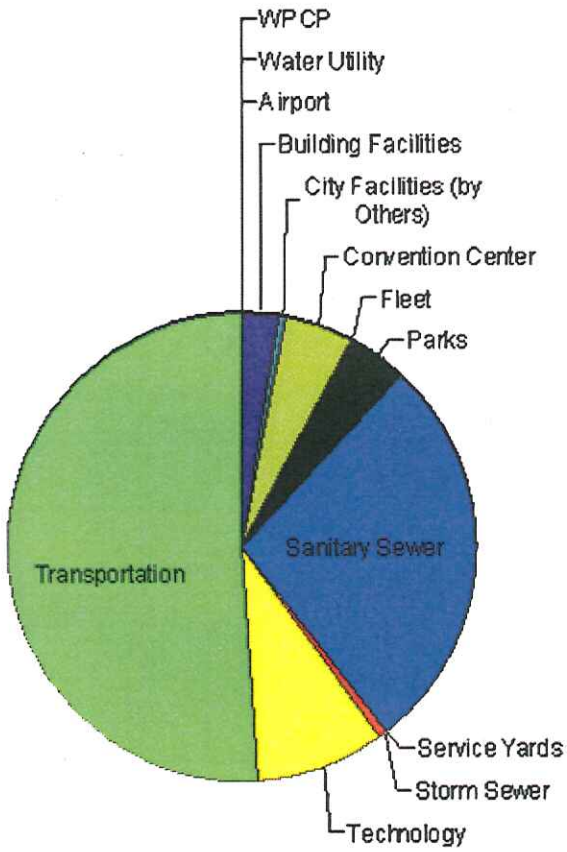
Attachments
1. Citywide Infrastructure Backlog
2. Examples of Streets in Various Condition (PCI) Categories
3. Pavement Conditions of Bay Area Jurisdictions
4. Local Funding Options Considered

Appendix
A. Streets with PCI below 50 (List of Streets in Poor Condition)
B. San Francisco Street Maintenance Study

Attachment 1

Citywide Infrastructure Backlog





Attachment 2

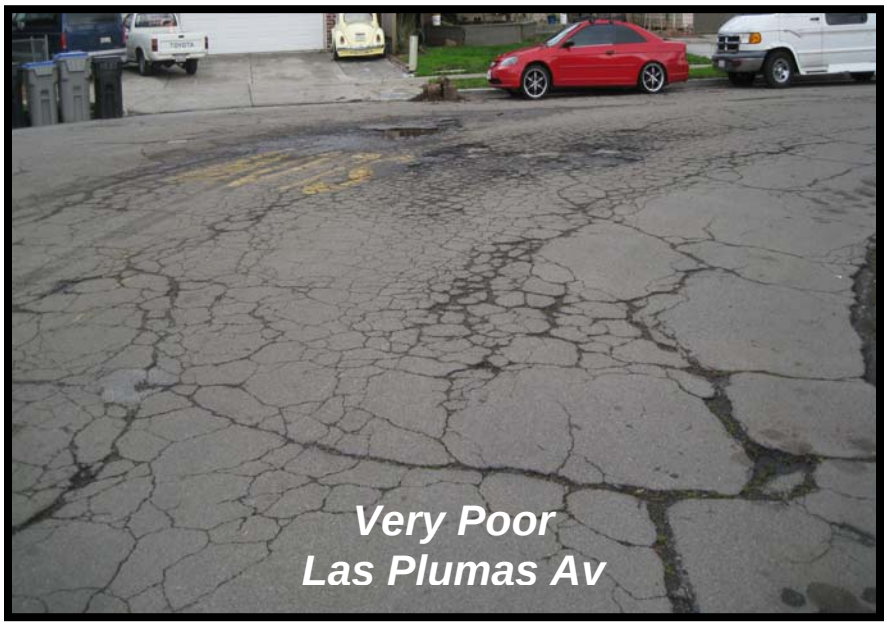
Examples of Streets in Various Condition (PCI) Categories

Rating Category:	Good –Excellent
PCI Range:	70-100
Treatment Required:	Preventive Maintenance Sealing
Cost Per Mile:	$35K-$70K
Number of Miles in Category	950 miles

Rating Category:	Fair
PCI Range:	50-69
Treatment Required:	Preventive Maintenance Sealing
Cost Per Mile:	$85K-$110K
Number of Miles in Category	990 miles

Attachment 2

Rating Category:	Poor
PCI Range:	40-49
Treatment Required:	Minor Rehabilitation
Cost Per Mile:	$200K-$500K
Number of Miles in Category	285 miles



Rating Category:	Very Poor
PCI Range:	26-39
Treatment Required:	Major Rehabilitation
Cost Per Mile:	$500K-$800K
Number of Miles in Category	95 miles

Rating Category:	Failed
PCI Range:	0-25
Treatment Required:	Reconstruction
Cost Per Mile:	$800K-$1.8M
Number of Miles in Category	50 miles

Attachment 3

Pavement Conditions of Bay Area Jurisdictions

(Sample listing of 109 Bay Area jurisdictions: 10 best, 10 worst, 10 biggest, and in Santa Clara County)

Bay Area Rank	Santa Clara County Rank	Jurisdiction	Total Lane Miles	2009 PCI
1		Brentwood	379	85 (Very Good)
2	1	**Los Altos**	226	83 (Very Good)
3		Foster City	121	82 (Very Good)
4		Belvedere	24	82 (Very Good)
5	2	**Santa Clara**	596	82 (Very Good)
6		Dublin	228	80 (Very Good)
7		Contra Costa County	**1323**	80 (Very Good)
8		Sonoma	68	79 (Good)
9	3	**Gilroy**	243	79 (Good)
10		Concord	706	78 (Good)
22	4	**Los Alto Hills**	113	76 (Good)
23	5	Morgan Hill	259	76 (Good)
26	6	**Campbell**	218	75 (Good)
28	7	**Mountain View**	329	75 (Good)
29	8	**Santa Clara County**	**1501**	75 (Good)
30	9	**Sunnyvale**	513	74 (Good)
39	10	**Saratoga**	281	72 (Good)
40		Alameda County	**997**	72 (Good)
41	11	**Palo Alto**	470	72 (Good)
43	12	**Los Gatos**	218	72 (Good)
47	13	**Cupertino**	303	70 (Good)
53	14	**Milpitas**	279	70 (Good)
61	15	**Monte Sereno**	31	68 (Fair)
69		Fremont	**1063**	66 (Fair)
73		Santa Rosa	**1090**	65 (Fair)
76		Solano County	**1165**	64 (Fair)
78		San Francisco	**2112**	63 (Fair)
80	16	**San Jose**	**4186**	* 63 (Fair)
91		Oakland	**1964**	58 (At Risk)
100		Richmond	549	53 (At Risk)
101		Vallejo	676	53 (At Risk)
102		East Palo Alto	80	52 (At Risk)
103		El Cerrito	138	50 (At Risk)
104		Marin County	848	50 (At Risk)
105		Orinda	192	48 (Poor)
106		St Helena	51	48 (Poor)
107		Larkspur	63	47 (Poor)
108		Rio Vista	45	45 (Poor)
109		Sonoma County	**2720**	44 (Poor)

Bay Area Region **42,492** **66 (Fair)**

*** The reported 63 PCI is based on San Jose data provided prior to the completion of 2010 construction season. Actual PCI to date is 64.**

Attachment 4

LOCAL FUNDING OPTIONS CONSIDERED

Alternative	Description	Pros/Cons	Status and Key Issues/Factors
Property-Based User Fee	A fee would be charged to each property for pavement maintenance services performed. Fee amounts could be based on the Average Daily Trips (ADT) associated with each land use type.	• Public hearing required to allow for protests. If there is a majority protest, then election to approve fee cannot be held • Simple majority approval of property owners who return mail-in ballots • No known examples for pavement maintenance in State	**Not Recommended:** • Proposition 218 states that no fee may be imposed for general governmental services where the service is available to the public at large substantially the same manner as it is to a property owner.
Garbage Truck Impact Fee	Haulers charged for use of streets and maintenance impacts of heavy trucks.	• Garbage trucks greatly contribute to pavement deterioration • Negotiation with haulers necessary • Legal challenge against another public agency imposing this fee	**Not Recommended:** • California Vehicle Code states that no local agency may impose a tax, permit fee, or other charge for the privilege of using its streets or highways, other than a permit fee for extra legal loads, after December 31, 1990, unless the local agency had imposed the fee prior to June 1, 1989. • Legal challenges against another public agency imposing this fee.
Benefit Assessment Districts	Assessment placed upon property proportional to the special benefit received as a result of the service. Special benefit and assessments could be based on the Average Daily Trips (ADT) associated with each land use type.	• Can only fund special benefit received • Requires extensive engineering work to establish district boundaries, special benefit, assessments • Assessment may be imposed unless a majority of property owners who return ballots protest (votes weighted by property ownership)	**Not Recommended:** • Not administratively economical or feasible. Compliance with State Law would likely require establishing many districts throughout the City to ensure special benefit and assessments for each property are appropriately defined.

Alternative	Description	Pros/Cons	Status and Key Issues/Factors
Community Facilities Districts	Amount of Special tax placed upon property must have a reasonable basis	• Does not require a specific benefit nexus • Not limited to funding only special benefit • Requires supermajority (2/3) approval of property owners returning ballots	**Not Recommended** • Special tax measure has the same approval threshold requirements and accomplishes the same objectives without establishing a special district.
Additional Developer Fees	Additional fees charged to developers to improve infrastructure based on the impacts of the development on pavement conditions	• Nexus required between development and fees/improvements • Limit on level of revenues that can be obtained	**Not Recommended:** • Limited Nexus to expand fees beyond current levels • Additional or higher fees will not measurably affect pavement funding or conditions • Negative impacts to the development community