

Safe and Sustainable Street Infrastructure Study



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With The City of Morgan Hill
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City of Morgan Hill

Safe and Sustainable Street Infrastructure Study

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Summary Report

Purpose of Study

The City of Morgan Hill’s “Streets Infrastructure” is a vital element of the community that it is universally used and essential for commerce, education, recreation, and public safety. Each and every Morgan Hill resident and employee depends on our local streets infrastructure regardless of their age, vocation, and economic status. For most people, it is the primary part of the City's tax-supported infrastructure that they access. Having streets that are safe to traverse, free of potholes, and clean are hallmarks of excellent communities.

For Morgan Hill to adequately maintain its streets infrastructure in a sustainable manner, however, is an increasingly expensive and complex endeavor. Morgan Hill is not alone in facing street maintenance challenges. The recently-released 2012 California Statewide Local Streets and Roads Needs Assessment shows that there has been a steady downward trend in street pavement condition since 2008. The majority of California’s counties now have an average pavement condition rating that is considered “at risk” and projections indicate that in 10 years, 25 percent of California’s streets and roads will be in the “failed” category. In a sobering note, the study concludes that \$8.2 billion annually will be required annually to properly maintain California’s local streets. Appendix A is the Executive Summary of this report.

In the past, the Morgan Hill Redevelopment Agency invested in street infrastructure development and street maintenance in order to stimulate private investment in the community. With the loss of this community institution, the major remaining funding sources available to the City are gas tax revenues, grants, and the general fund. With this in mind, the City Council commissioned this study:

1. To acknowledge and quantify the significant challenges the community faces in maintaining street pavement;
2. To evaluate the maintenance activities and needs for all of the ancillary elements of the complete street infrastructure (sidewalks, trees, signals, etc.) that have not previously been studied; and
3. To identify a range of solutions that the City Council, community, and staff can use to develop a plan for establishing safe and sustainable streets that is consistent with the City's Public Safety Strategic Plan Outcome to Reduce Incidents of Crime and Traffic Collisions

Format of the Study

This Summary Report is intended to highlight all of the data collected in the Study and present options for the City Council and the Morgan Hill Community to consider. For those interested in additional information relating to the information contained in the Summary Report, there are significantly more details contained in the Study's appendices.

Overview: What is Morgan Hill's Streets Infrastructure?

The City has approximately 116 miles of local streets with a variety of attached ancillary elements including:

- Street Trees
- Curb & Gutter
- Bridges
- Guard Rails
- Traffic Signals
- Streetlights
- Medians and Planters
- Parking Lots
- Signs
- Stormdrains
- Furnishings
- Sidewalks

As detailed in Appendix B, these combined elements have a replacement value of approximately \$392 million. About one-third of this total is the street pavement itself with the ancillary elements making up the majority of the value.

Current Street Infrastructure Programs and Activities

The Community Development Agency and the Community Services Department work closely together in maintaining the streets infrastructure. While Community Development engineers oversee the annual major capital program dedicated to pavement treatments and improvements, the Community Services Maintenance Team conducts day-to-day hands-on maintenance activities and oversees several maintenance contracts. This distinction is important to understand 1) the financing needs of each area; and 2) the impact of additional resources in each area. Table I broadly classifies these activities and includes the FY 12/13 budget allocation.

Table I: Funding for Current Activities

Activity	Funding Source	Cost
Annual Pavement Management Capital Projects	Gas Tax, BayArea Grant, Vehicle Registration Fees, General Fund	\$979,000
Street Maintenance	General Fund	\$405,000
Traffic Control & Lighting	General Fund	\$644,000
Street Landscape Maintenance	General Fund	\$376,000
Storm Drain	General Fund	\$228,000
Total		\$2,632,000

Current Capital Projects

The City's engineers oversee the biennial preparation of a Street Pavement Management Program (PMP) which assesses street conditions and prioritizes the listing of preventative maintenance investments the City should make based on the expected funds available. The 2012 PMP identified an overall Pavement Condition Index (PCI) of 76 in Morgan Hill. While this is "Very Good" and above that found in many communities, it reflects the significant investment the community has made in the past on new streets using redevelopment agency funding and the relative young age of many residential communities. The report indicates that nearly 20% of the system has fallen below a PCI of 70 - which is the point where pavement deteriorates more rapidly and preventive maintenance costs become more expensive. Appendix C summarizes the entire 2012 PMP. Table II lists some of the City's significant streets and their related PCI ratings they received in the PMP.

Table II: Current Street Conditions for Significant Streets

Street Name	High PCI	Low PCI
Monterey Road	93	56
Cochrane	82	73
East Dunne	94	55
West Dunne	100	67
Tennant	96	85
Watsonville	64	32
East Main	93	65
West Main	79	52
Butterfield	94	93

For the past two years, a majority of the City's capital project budget has been dedicated to working collaboratively with Santa Clara County on resurfacing the City's portions of streets the County was resurfacing (Hale, Half, Condit) in order to leverage the County's work and produce uniform streets. Reconstructing Watsonville Road and addressing the failing areas of major arterials will be a focus in the coming year.

Current Funding Sources

For FY 12/13, the PMP capital program expenses are funded from the following sources:

CA Highway User Tax	\$460,000
Fed One BayArea Grant	\$200,000
VTA/Veh. License Fee	\$200,000
Gen Fund Transfer	\$115,000
Other	\$4,000
TOTAL	\$979,000

Current Maintenance Activities

The Community Services Maintenance Team has 5.6 full time equivalents (FTE) dedicated to street maintenance activities and a budget of \$1,653,000 in FY 12/13. Table III breaks down these resources into expense categories for each of the four broad areas of street maintenance.

Table III: Expense Categories of Current Maintenance Activities by Area

City of Morgan Hill Maintenance Services Division Labor Allocation & Budgeted Supplies, Electrical Usage, and Services Current FY 2012/13						
ITEM		Street Maintenance	Traffic Control & Lighting	Landscape Maintenance	Storm Drain	TOTAL
Labor		1.68 FTE	1.12 FTE	1.68 FTE	1.12 FTE	5.60 FTE
Labor Expense		\$ 199,000	\$ 133,000	\$ 199,000	\$ 133,000	\$ 664,000
Contracted Services		\$ 120,000	\$ 203,000	\$ 86,000	\$ 28,000	\$ 454,000
Supplies and Other		\$ 79,000	\$ 52,000	\$ 79,000	\$ 52,000	\$ 262,000
Electrical Usage		\$ 7,000	\$ 256,000	\$ 12,000	\$ 15,000	\$ 290,000
TOTAL	\$	\$ 405,000	\$ 644,000	\$ 376,000	\$ 228,000	\$ 1,653,000
	%	24.5%	39.0%	22.7%	13.8%	100.0%

Appendix D further details the particular tasks and activities falling under each of these broad areas.

Current Funding Sources

To offset some of this \$1,653,000 expense, \$615,000 of the Highway User Tax is applied for repairing potholes and other immediate street maintenance repair and preventative maintenance needs. The balance of the budgeted allocation is made up mostly by the General Fund.

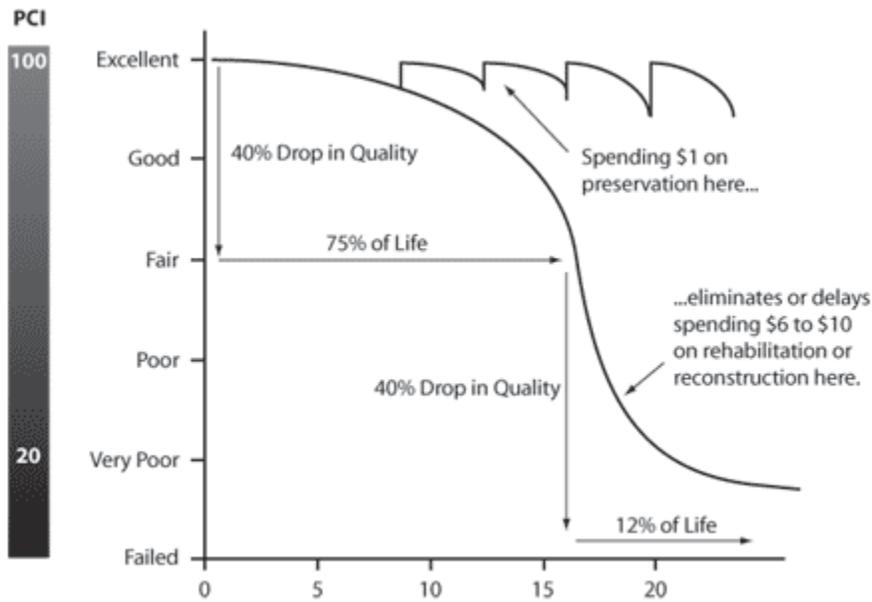
Developing Safe and Sustainable Streets –Annual Capital Investments

Given the invaluable nature of the City's streets infrastructure, it is vital that the infrastructure be maintained in a manner that promotes public safety and ensures that maintenance activities occur at a sustainable frequency (i.e., each year's maintenance activities and improvements equal or exceed each year's decay and degradation.) It has been broadly acknowledged in the City's budget for several years that the City has not been investing in the capital project maintenance program at a sustainable level. The loss of Redevelopment Agency Funding for improvements serving the Plan Area exacerbated the shortcoming.

The 2012 PMP indicated that the City had a deferred maintenance backlog of approximately \$14 million. Deferred maintenance for the PMP is the preventative maintenance and reconstruction activities that are needed, but not done. The PMP report estimates the amount of deferred maintenance at any given time based on the types of preventative maintenance and reconstruction activities projected to be performed, estimated costs for these activities, and total funds to be allocated versus the pavement system total needs.

It is essential to note that preventative maintenance treatments, which the City is not currently doing at adequate levels, can dramatically reduce the overall costs of street maintenance. The longer asphalt pavement is left untreated, the faster it deteriorates which increases the quantity and cost of the maintenance activities needed to rehabilitate the pavement. For example, the timely application of crack sealing and slurry seals in the first 7-10 years of pavement life, with follow up preventive maintenance cycles (slurry seals, cape seals, thin overlays, etc.) every 5 years, will keep the PCI above 70 and avoid rapid pavement deterioration, expensive maintenance repairs, and total pavement reconstruction. Figure I depicts this process graphically.

Figure 1: Pavement Life Cycle and Maintenance Impacts (Source: Federal Highway Administration)



The 2012 PMP identified that the City's current level of capital investment of slightly less than \$1 million annually is not adequate to sustain the City's current PCI of 76. If this level of investment is continued for the next five years, the City's PCI would be expected to fall to 72 and the deferred maintenance balance would grow to \$21 million – an increase of \$7 million. Aside from the quantifiable drop in pavement condition, the PMP concluded that the expected capital project budget allocations over the next 5 years are not sufficient to maintain a safe and sustainable streets pavement system, which will make it even more costly and difficult to prevent failure of the City's street pavement system. Appendix C provides more information on pavement maintenance and the conditions found in the 2012 PMP.

The 2012 PMP included different potential investment scenarios and analyzed their impact on the City's pavement condition and backlog of deferred maintenance. Each of these assumed that 36% of the annual budget would be applied towards preventive maintenance and 64% would be dedicated to overlays and reconstruction. Table IV summarizes the results of the analysis.

Table IV: Summary of 2012 PMP Investment Scenarios

Scenario Description	Annual Investment	PCI	Deferred Maintenance
No Investment	\$0	Decreases from 76 PCI in 2012 to 69 PCI in 2016	Increases from \$14.2 million in 2011 to \$25.5 million in 2016.
Minimal Investment	\$750,000	Decreases from 76 PCI in 2012 to a 71 PCI in 2016	Increases from \$14.2 million in 2011 to \$22 million in 2016
Expenditure Status Quo Plus	\$1,000,000	Decreases from a 76 PCI in 2012 to a 72 PCI in 2016	Increases from \$14.2 million in 2011 to \$21 million in 2016
Maintain PCI	\$2,700,000	Remains at 76	Remains at \$14.2 million
Boost PCI by 5	\$4,300,000	Increases from 76 PCI in 2012 to an 81 PCI in 2016	Decreases from \$14.2 million in 2011 to \$4.8 million in 2016
Eliminate Backlog	\$6,250,070	Increases from a 76 PCI in 2012 to an 85 PCI in 2016	Decreases from \$14.2 million in 2011 to \$0 in 2016

These costs also do include any street specific limitations or specific conditions, such as “excessive crowning” limitations of the street section, which would require more costly wedge cutting and/or reconstruction. For major parts of both West Main Avenue and Monterey Road, for example, it may be infeasible to apply additional asphalt overlays without making the driveway entrances too steep due to the excessive crowning. In the past, much of this major street work was funded by the Redevelopment Agency and no replacement funding source has been identified.

These data are graphically depicted in the following two charts.

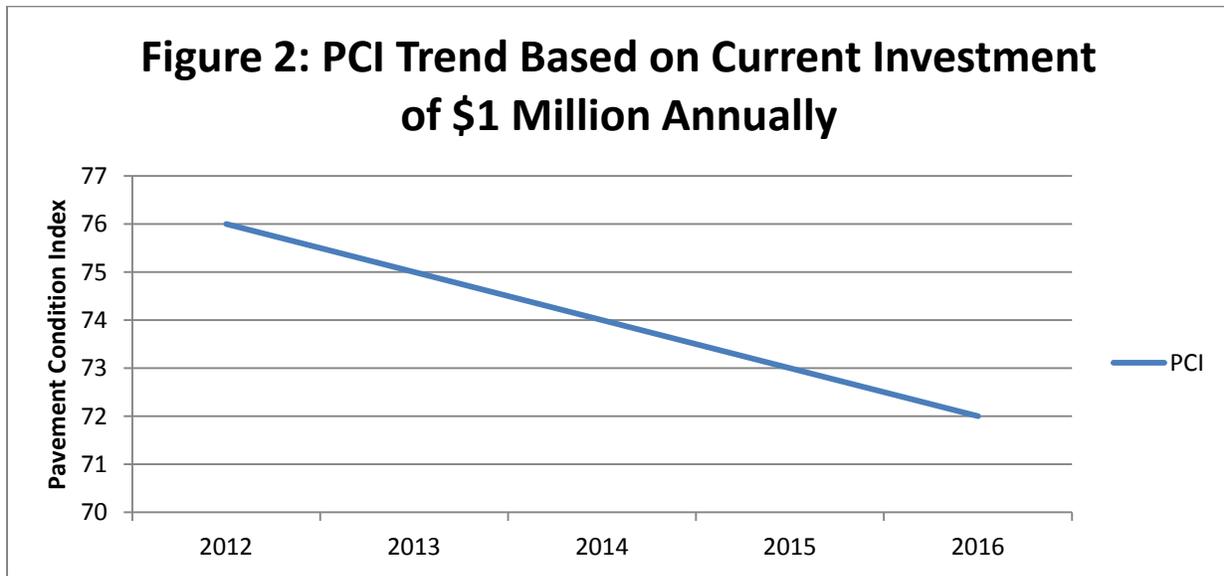
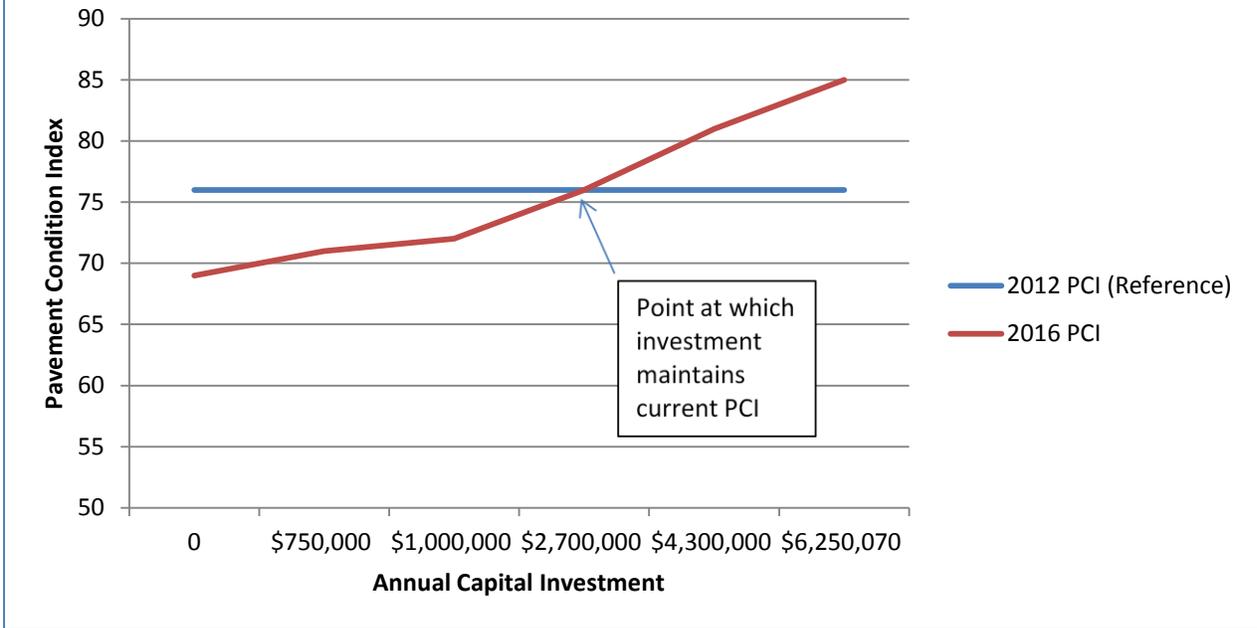


Figure 3: 2016 PCI PROJECTION BASED ON ANNUAL INVESTMENT



While an annual budget of \$2,700,000 each year would maintain the current PCI of 76 and keep the deferred maintenance backlog at \$14.2 million, the PMP suggests that, at a minimum, annual budgets for asphalt pavement work alone should be increased to \$2,850,000 each year. Raising the budget to \$2,850,000 will begin an increasing trend in overall pavement condition while reducing the amount of the deferred maintenance backlog. At this budget level, the overall PCI will increase from a 76 PCI in 2011 to a 77 after treatments are applied in 2016 and the community will be on a sustainable path for capital investment.

However, this recommendation represents an increase of almost \$2 million annually in PMP investments. While it may be possible for the City to occasionally obtain grants to support this effort, it is unlikely that grants would serve as the ongoing revenue source needed to achieve sustainability. Instead, the City can consider the following three options:

1. **Dedication of General Fund Revenues** - The City has made discretionary General Fund transfers into the PMP CIP of over \$100,000 for several years. It is at the City’s discretion to decide on any amount of General Fund transfer into this account to support additional street preventative maintenance and pavement reconstruction. While the General Fund is limited and has many high-priority demands on its resources, this source of funding is legally available at the City Council’s discretion. Dedicating additional general funds to street maintenance may have an adverse impact on other services supported by the General Fund.

2. ***New Tax Revenue Source*** – Some communities have successfully passed ballot measures to increase local taxes (sales or utility) dedicated for street maintenance. While a special tax requires a 2/3 supermajority in order to pass, virtually every voter utilizes the local road network and can benefit from improved street maintenance. Pursuing a ballot measure is a complicated and expensive process that would require significant public discussion and involvement before moving forward. Establishing a citizen’s committee to help establish the need for the measure and to oversee the expenditures of tax revenues is often a useful component of the process. For reference purposes, increasing the local sales tax by 1/4 cent would generate between \$1.5 and \$2 million annually.

3. ***New Financing District*** - A new financing district could be created which would be responsible for the care and maintenance of a portion of the City’s Street Infrastructure. Financing districts typically require approval (typically 2/3 majority) by the property owners within the district’s boundaries. Revenues are generated from property owner approved assessments, property tax increments, or voluntary diversion of property tax revenues. Because of the lengthy processes required to develop potential district boundaries and participants, and the property owner approval process, the use and success of these financing mechanisms has been limited. There is state legislation pending that attempts to make it easier to establish new districts.

Developing Safe and Sustainable Streets –Maintenance Activities

While the City has not been investing in capital street maintenance activities at a sustainable level, the maintenance of ancillary street elements has suffered a similar fate as the City’s operating budget has been reduced. Programs to routinely trim trees and replace sidewalks have been discontinued in the past decade. Similar to the maintenance of street asphalt, it is vital that the infrastructure be maintained in a manner that promotes public safety and ensures that maintenance activities occur at a sustainable frequency.

To evaluate the level of maintenance activities for the ancillary elements of the streets infrastructure, the author researched the activities of other communities, interviewed Morgan Hill staff about problems experienced, and referenced documents from the American Public Works Association. Once a reasonable "Safe and Sustainable" standard was established, the

standard was compared to the City of Morgan Hill's current practices. The analysis of the city's practices is detailed in Appendix E. Table V summarizes the results of the analysis.

Table V: Summary of Current Practice Analysis

Areas Meeting the Safe and Sustainable Standard
Temporary minor street pavement maintenance, failing utility cuts, and pothole repairs
Unpaved alley inspection and repair
Public parking lot weekly sweeping
Stamped concrete and paver emergency repairs
Sidewalk emergency grinding and repairs
Guard rail and fencing emergency repairs
Debris in roadway emergency removal
Hazardous material spill response
Traffic signal regular maintenance
Traffic sign retroreflectivity testing
Street name sign replacement
Streetlight maintenance and repair
Median landscaping and road shoulder maintenance and weed abatement
Downtown flower planter maintenance (volunteers and Improvement District)
Directional sign and street furnishings emergency maintenance and repair
Street tree emergency response, removals, and hazard abatement
Citywide street trash can dumping and disposal
Storm drain pipeline/culvert system emergency removal of debris and visual inspections
Storm drain pump station operation
Storm drain inlet inspection and clearing

Areas Not Being Sustainably Maintained
Unpaved alley periodic regrading
Public parking lot preventive maintenance (sealing, etc.)
Public parking lot restriping
Stamped concrete and paver periodic preventative maintenance
Sidewalk periodic inspection, replacement, and repair
Curb and gutter periodic inspection, replacement, and repair
Periodic bridge inspections
Guard rail and fencing periodic inspection, replacement, and repair
Striping, street markings, and painted colored curbing
Replacement of wood light poles
Median landscaping and road shoulder periodic replacement and rejuvenation
Downtown flower box and irrigation major replacement and repair
Street tree scheduled trimming on five or eight-year cycle
Replacement tree plantings
Storm drain pipeline/culvert system annual inspection, flushing and debris removal
Storm drain pump stations scheduled replacement and repair
Open storm drainage channel (Butterfield Channel) erosion remediation and silt removal

As a result of this analysis, estimates were developed addressing what it would take to bring all maintenance activities up to the safe and sustainable level. Appendix F shows the combined budget scenarios and allocations that were considered in the analysis. The recommended scenario, Scenario 4, requires an average annual additional investment of \$415,000 over the next five years in order to achieve safe and sustainable maintenance services.

This \$415,000 amount is modest when compared to the capital investment requirements described in the previous section. Whereas the additional capital requirements represent a 200% increase, the additional maintenance requirements are about 25% of the currently budgeted amount. The potential revenue sources available to fund maintenance services are identical to those identified for capital investments and consist of the City's General Fund, which has many competing demands, and new revenue sources, which require voter or property owner approval.

Unlike capital investment requirements, however, there are different approaches that the City could evaluate that would shift some of the cost burden to property owners who directly benefit from the streets infrastructure. The primary way that other cities have accomplished this is to adopt an ordinance that makes property owners responsible for maintaining the sidewalk and street trees in front of their property. City staff haven't substantially evaluated this approach and would only do so if the City Council was interested in learning more about

the approach. Enforcing these requirements do require staff time and would only eliminate approximately \$100,000 of annual expense.

Summary of Findings

1. The City's valuable streets infrastructure has not been sustainably maintained in the recent past due to funding reductions imposed by City budget limitations and the elimination of the City's Redevelopment Agency. A \$2.4 million increase in annual investments is needed in order to return street maintenance activities to a safe and sustainable path and begin making overall improvements in pavement condition while reducing the deferred maintenance backlog.
2. If the current level of street investment is continued, the City will experience 1) declines in the condition of the City's streets, 2) a growing demand for increased street maintenance annual funding, and 3) deferred maintenance will grow from \$14 to \$21 million in 2016.
3. The City has limited financing options to increase its investment in streets without adversely impacting other General Fund services or asking the community to consider new revenue sources.

Appendices

- A. Executive Summary: 2012 California Statewide Local Streets and Roads Needs Assessment
- B. Replacement Value of Morgan Hill Streets Infrastructure
- C. Summary of 2012 Pavement Management Program
- D. Summary of Current Maintenance Activities
- E. Analysis of Current Maintenance Activities Compared to Safe and Sustainable Standards
- F. Five-Year Budget Allocation Scenarios

Appendix A

Executive Summary: 2012 California Statewide Local Streets and Roads Needs Assessment

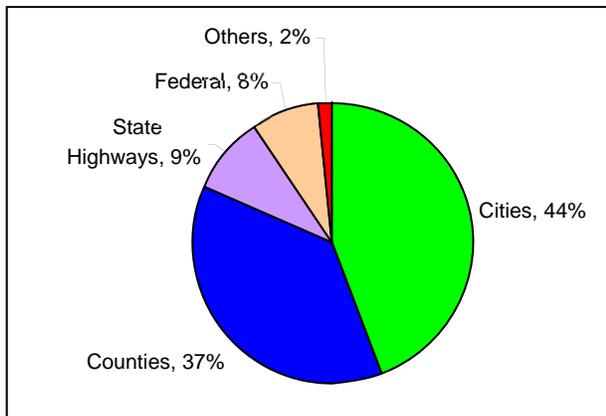
Executive Summary

California's local street and road system continues to be in crisis.

Every trip begins on a city street or county road. Whether traveling by bicycle, bus, rail, truck or family automobile, Californians need a reliable and well-maintained local street and road system. However, these are challenging times on many levels. Funding is at risk, and there is a significant focus on climate change and building sustainable communities, and the need for multi-modal opportunities on the local system has never been more essential. Every component of California's transportation system is critical to provide a seamless, interconnected system that supports the traveling public and economic vitality throughout the state. Sustainable communities cannot function without a well-maintained local street and road system.

The first comprehensive statewide study of California's local street and road system in 2008 provided critical analysis and information on the local transportation network's condition and funding needs. This 2012 needs assessment provides another look at this vital component of the state's transportation system and finds further deterioration and a growing funding shortfall.

As before, the objectives were to report the condition of the local system and provide the overall funding picture for California's local street and road transportation network. We needed answers to some important questions. What are the current pavement conditions of local streets and roads? What will it cost to repair all streets and roads? What are the needs for the essential components to a functioning system? How much is the funding shortfall? What are the solutions?



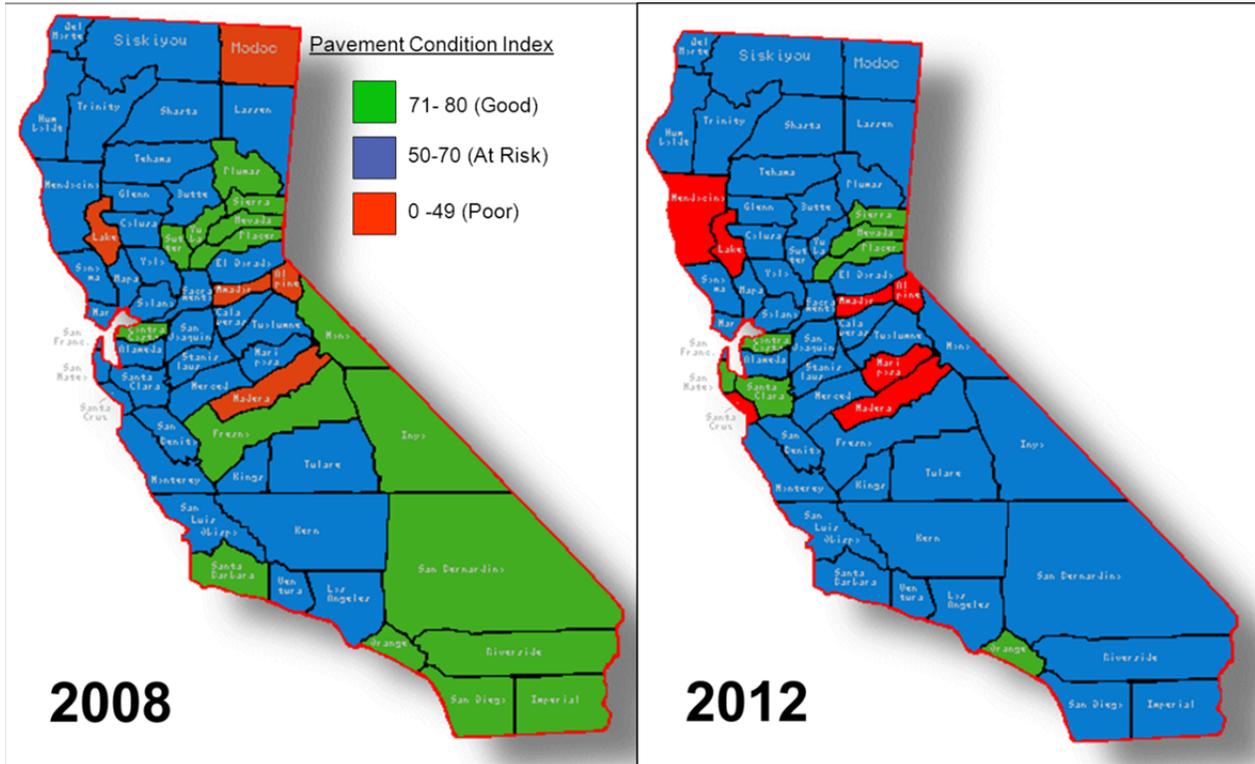
As owners of 81 percent of the state's roads, cities and counties found that the 2008 study was of critical importance for several reasons. While federal and state governments' regularly assess their system needs, no such data existed for the local component of the state's transportation network. Historically, statewide transportation funding investment decisions have been made without recognition of the particular requirements of the local system, and without local pavement condition data. Thus, this biennial assessment provides a critical piece in providing policy makers with a more complete picture of our transportation system funding needs.

The goal is to use the findings of this report to continue to educate policymakers at all levels of government about the infrastructure investments needed to provide California with a seamless, multi-modal transportation system. The findings of this study provide a credible and defensible analysis to support a dedicated, stable funding source for maintaining the local system at an optimum level. It also provides the rationale for the most effective and efficient investment of public funds, potentially saving taxpayers from paying significantly more to fix local streets and roads into the future.

This update surveyed all of California's 58 counties and 482 cities in 2012. The information collected captured data from more than 98 percent of the state's local streets and roads! This level of participation exemplifies the interest at the local level to provide comprehensive and defensible data in hopes of tackling this growing problem.

Pavements

The results show that California’s local streets and roads are moving ever closer to the edge of a cliff. On a scale of zero (failed) to 100 (excellent), the statewide average pavement condition index (PCI) has deteriorated from 68 in 2008 to 66 (“at risk” category) in 2012. If current funding remains the same, the statewide condition is projected to deteriorate to a PCI of 53 by 2022. Even more critical, the unfunded backlog will increase from \$40.4 billion to \$66 billion. The maps illustrate the pavement deterioration that has resulted in each county since 2008.



To spend the taxpayer’s money cost-effectively, it makes more sense to preserve and maintain our roads in good condition than to let them deteriorate, since deteriorated roads are more expensive to repair in the future. Consistent with that approach, the costs developed in this study are based on achieving a roadway pavement condition of what the industry calls Best Management Practices (BMPs). This condition represents improving the pavement condition to a level where roads need preventative maintenance treatments (i.e., slurry seals, chip seals, thin overlays). These treatments have the least impact on the public’s mobility and commerce, and are more environmentally friendly than the next level of construction that would be required (i.e., rehabilitation and reconstruction).

The importance of this approach is significant. As roadway pavement conditions deteriorate, the cost to repair them increases exponentially. For example, it costs twelve times less to maintain a BMP pavement compared to a pavement that is at the end of its service life. Even a modest resurfacing is four times more expensive than maintenance of a pavement in the BMP condition. At a time when counties and cities are on fixed budgets, employing maintenance practices consistent with BMP results in treating four to twelve times more road area. By bringing the roads to BMP conditions, cities and counties will be able to maintain streets and roads at the most cost-effective level. It is a goal that is not only optimal, but also necessary.

Multiple funding scenarios were investigated to determine the impacts different funding levels would have on the condition of the roads. Five different scenarios were analyzed to determine the level of improvements achieved in ten years. The funding scenarios were as follows:

1. Existing funding levels of \$1.33 billion/year – this is the current funding level available to cities and counties.
2. Additional \$1 billion/year – this assumes an additional \$1 billion is available through a yet to be determined revenue source.
3. Funding to maintain existing conditions (\$3.23 billion/year) – this is the funding level required to maintain the pavement conditions at its current PCI of 66.
4. Efficiency measures to add \$882 million/year – this assumes that new technologies to repair pavements may be implemented and which is estimated to save \$882 million/year.
5. Funding required to achieve best management practices (\$7.23 billion/year) – the optimal scenario is to bring all pavements into a state of good repair so that best management practices can prevail. After this, it will only require \$2.4 billion a year to maintain the pavements at that level.

Three key performance measures were used to evaluate the impacts of each scenario and the results are summarized in the table below:

1. Pavement condition index
2. Percent of pavements in both good and failed condition
3. Cost savings achieved by not deferring repairs to a later date

Scenarios	Annual Budget (\$B)	PCI in 2022	Condition Category	% Pavements in Failed Condition	% Pavements in Good Condition	Cost Savings* (\$B)
1. Existing Funding	\$1.33	53	At Risk	25%	46%	-
2A. No bond	\$2.33	60	At Risk	23%	68%	\$26
2B. Bond	\$4.23/\$1.33	63	At Risk	21%	71%	\$34
3. Maintain PCI = 66	\$3.23	66	At Risk	20%	78%	\$44
4. Efficiency Savings	\$4.11	71	Good	16%	83%	\$59
5. Best Mgmt. Practices	\$7.23	84	Excellent	0%	100%	\$108

* Cost savings are compared to Scenario 1.

Essential Components

The transportation network also includes essential safety and traffic components such as curb ramps, sidewalks, storm drains, streetlights and signals. These components require \$30.5 billion over the next 10 years, and an estimated shortfall of \$21.8 billion.

Bridges

Local bridges are also an integral part of the local streets and roads infrastructure. There are 11,863 local bridges, and approximately \$4.3 billion is needed to replace or rehabilitate them. There is an estimated shortfall of \$1.3 billion.

Total Funding Shortfall

The table below shows the total funding shortfall of \$82.2 billion over the next 10 years. For comparison, the 2008 and 2010 results are also included.

Summary of 10 Year Needs and Shortfall for 2008 through 2012(\$Billion)

Transportation Asset	Needs (\$B)		2012		
	2008	2010	Needs	Funding	Shortfall
Pavement	\$67.6	\$70.5	\$72.4	\$13.3	\$(59.1)
Essential Components	\$32.1	\$29.0	\$30.5	\$8.7	\$(21.8)
Bridges	N/A	\$3.3	\$4.3	\$3.0	\$(1.3)
Totals	\$99.7	\$102.8	\$107.2	\$25.1	\$(82.2)

What are the Solutions?

To bring the state's local street and road system to a best management practice level where the taxpayer's money can be spent cost effectively; we will need approximately \$59.1 billion of additional funding for pavements alone and a total of \$82.2 billion for a functioning transportation system over the next 10 years. The sooner this is accomplished, the less funding will be required in the future (only \$2.4 billion/year will be needed to maintain the pavements after that).

If cities and counties do not get additional funding, the results will be disastrous for local streets and roads, and ultimately the entire transportation network, as all modes are interrelated. The fact that more than twice the current funding level is needed just to maintain the current conditions is alarming.

To bring the local system back into a cost-effective condition, thereby preserving the public's \$189 billion pavement investment and stopping further costly deterioration, \$8.2 billion annually in new funds are needed to stop the further decline and deterioration of the local street and road system. This is equivalent to a 56-cent per gallon gas tax increase.

The conclusions from this study are inescapable. Given existing funding levels available to cities and counties for maintaining the local system, California's local streets and roads will continue to deteriorate rapidly within the next 10 years. Unless this condition is addressed, costs to maintain the local system will only continue to grow, while the quality of California's local transportation network deteriorates.

It is imperative that cities and counties receive a stable and dedicated revenue stream for cost effective maintenance of the local system to avoid this crisis.

Appendix B

Replacement Value of Morgan Hill Streets Infrastructure

**TABLE BA - CITY OF MORGAN HILL REPLACEMENT VALUE
OF A SAFE AND SUSTAINABLE STREETS INFRASTRUCTURE**

Infrastructure Item	VALUE (1,000s)
A. Street Pavement Management Program (PMP)	
1. Street Pavement Management Program CIP Fund 308	
<ul style="list-style-type: none"> • Street pavement reconstruction <ul style="list-style-type: none"> - 116 center line miles; 2,707,765 sq. yds. @ \$46.68/sq. yd. = 	\$ 126,398
B. Maintenance Services Division Infrastructure	
1. Street Maintenance Program	
<ul style="list-style-type: none"> • Unpaved alleys <ul style="list-style-type: none"> - 0.7 centerline miles; 9,800 sq. yds. @ \$10/sq. yd. = • Downtown parking lots (170 parking spaces) <ul style="list-style-type: none"> - 9,680 sq. yds. pavement reconstruct @ \$50/sq. yds. = • Stamped concrete and brick pavers <ul style="list-style-type: none"> - 8,200 sq. yds @ \$75/sq. yd. = • Sidewalks <ul style="list-style-type: none"> - 150 miles @ \$ 8.50/sq. yd. = - 200 miles @ \$ 31.90/lf = • Curb and gutters <ul style="list-style-type: none"> - 200 miles @ \$ 31.90/lf = • Bridge and culverts <ul style="list-style-type: none"> - 5 bridges - 19 culverts • Guard rail and fencing 	\$ 98 \$ 484 \$ 615 \$ 6,732 \$ 33,686 \$ 33,686 \$ 20,000 \$ 15,000 \$ 500
2. Traffic Control Maintenance Program	
<ul style="list-style-type: none"> • Striping and street markings <ul style="list-style-type: none"> - 143 lane miles striping @ \$1.25/lf = - multiple street markings - crosswalks - painted curbs • Traffic signals <ul style="list-style-type: none"> - 39 signals - 15 flashing beacons/signs • Traffic and directional signs <ul style="list-style-type: none"> - 2,700 traffic signs @ \$200/ea = 	\$ 944 \$ 30 \$ 30 \$ 65 \$ 12,000 \$ 150 \$ 530

TABLE BA - CITY OF MORGAN HILL REPLACEMENT VALUE

OF A SAFE AND SUSTAINABLE STREETS INFRASTRUCTURE (Contin.)

Infrastructure Item	VALUE (1,000s)
<ul style="list-style-type: none"> • Street name sign <ul style="list-style-type: none"> - 760 street name signs @ \$40/sign = 	\$ 30
<ul style="list-style-type: none"> • Street lights (including poles) <ul style="list-style-type: none"> - 2,100 HPS plus 1,600 LED @ \$ 3,850/ea. = 	\$ 14,245
3. Landscape Maintenance Program	
<ul style="list-style-type: none"> • Medians (landscaped) <ul style="list-style-type: none"> - 12.9 Acres; 62,436 sq. yds @ \$25/sq. yd = 	\$ 1,560
<ul style="list-style-type: none"> • Brick planters 4' x 4' size <ul style="list-style-type: none"> - 90 ea. @ \$4,000 ea. = 	\$ 360
<ul style="list-style-type: none"> • Directional signs, and street furnishings <ul style="list-style-type: none"> - 17 directional signs @ \$4,000/each = - 15 benches @ \$900 = - 1 fountain, 1 kiosk, 1 bronze sculpture @ \$20,000 L.S. = <li style="padding-left: 40px;">- multiple granite blocks, tree grates, and bollards @ \$60,000 L.S. = 	\$ 68 \$ 14 \$ 20 \$ 60
<ul style="list-style-type: none"> • City Street Trees (mature) <ul style="list-style-type: none"> - 5,000 ea. @ \$4,000/ ave. value mature tree each = 	\$ 20,000
<ul style="list-style-type: none"> • Citywide trash cans <ul style="list-style-type: none"> - 65 each @ \$500/each = 	\$ 32
4. Storm Drain System Maintenance Program	
<ul style="list-style-type: none"> • Storm drainage pipeline/box culvert system <ul style="list-style-type: none"> - 98 mi. storm drain @ \$150/lf - 19 culverts @ \$ 300,000 ave. each 	\$ 77,616 \$ 5,700
<ul style="list-style-type: none"> • Storm pump stations <ul style="list-style-type: none"> - 4 stations @ \$2 million/ each = 	\$ 8,000
<ul style="list-style-type: none"> • Open storm drainage channels (Butterfield Channel) <ul style="list-style-type: none"> - 4 mi. @ \$500,000/mi = 	\$ 2,000
<ul style="list-style-type: none"> • Storm drain inlets <ul style="list-style-type: none"> - 3,000 ea. @ \$15,000/each = 	\$ <u>45,000</u>
GRAND TOTAL VALUE OF CITY OF MORGAN HILL SAFE & SUSTAINABLE STREETS INFRASTRUCTURE (\$1,000s)	\$ 391,967

Appendix C

Summary of 2012 Pavement Management Program

2012 Pavement Management Program

The most recent MTC funded Pavement Management Program (PMP) Update report (prepared by Harris & Associates, Feb. 2012) has identified the following pavement system condition for the City of Morgan Hill. The entire pavement system within Morgan Hill is composed of approximately 116 center line miles of paved surfaces. The entire pavement system has a current reconstruction value of over \$126 million if all of the pavement were to be repaired or replaced to a reconstructed condition at an assumed average rate of \$46.68/sq. yd. These cost and analysis do not include any daily operational street maintenance costs, which are temporary and non-structural pavement repairs (pothole patching, fog sealing, stamped concrete and brick paver repairs, etc.) or ancillary element maintenance and improvements (striping touch up, street markings, sidewalk, curb and gutter, street lights, traffic signals, medians, bridge repair) expended by the Maintenance Services Division. These costs also do include any street specific limitations or specific conditions, such as “excessive crowning” limitations of the street section, which would require more costly wedge cutting and/or reconstruction.

To assist in planning capital improvement project maintenance/repairs/reconstruction needs, the PMP report grouped the City's streets by functional class (arterial, collector, and residential). Below **TABLE A** shows the City’s pavement mileage, square yards of pavement surface, 2011 Pavement Condition Index (“PCI”), and percentage of reconstruction value by functional class,

TABLE A						
City of Morgan Hill’s Pavement System Breakdown By Roadway Classification						
Functional Class Roadway	Center Line Miles	Total Lane Miles	Sq. Yards Pavement	% of Total Pavement System	2011 PCI	% of Reconstruct Value
Arterials	20.47	61.29	696,276	17.6%	76	25.71%
Collector	22.42	46.64	517,785	19.3%	74	19.12%
Residential/Local	73.23	147.94	1,493,702	63.1%	77	55.16%
TOTALS	116.11	255.88	2,707,763	100.0%	76	100.00%

The PMP report criteria defined the condition category and the corresponding maintenance strategy that needs to be applied to maintain the street system in a safe and sustainable condition is described below and is based on PCI scores. Streets with PCI scores over 90 are considered to be in excellent condition and require no treatment. Streets with scores from 70 to 89 are considered “Very Good”, but may require cracks to be sealed and/or pavement to be slurry sealed. Streets with scores from 50 to 69 are considered “Good”, less

safe, but may require a more expensive cape seal or a thin AC overlay. Streets with scores from 25 to 49 are considered “Poor”, not safe, and generally require a mill and asphalt concrete (AC) overlay. Streets with scores below 25 are “Very Poor”, very unsafe, and are in need of surface reconstruction. The City of Morgan Hill’s street system currently has pavement conditions within all PCI ranges noted.

<u>Condition</u>	<u>PCI Range</u>	<u>Typical Maintenance Treatments</u>
Excellent	90-100	Do Nothing. No maintenance required.
Very Good	70-89	Seal Cracks/ Thin Overlay /Slurry Seal
Good	50-69	Thin Overlay; cape seal
Poor	25-49	Thick Overlay with Dig Out
Very Poor	0-24	Reconstruct Surface (AC)

The PMP report states that typical asphalt pavement has a 20-year life cycle if left untreated. Pavement section life can be significantly extended beyond 20 years through minor preventive maintenance activities (crack sealing, slurry seals, cape seals, overlays, rubberized chip seals, thin bonded wearing courses, and rubberized overlays) as long as pavement conditions remain at a PCI = 70 or higher. If new pavement sections are left untreated, they will deteriorate from a PCI of 100 to a PCI of 69 or less by year 13, to a PCI of less than 50 by year 16, and fall to a PCI of 24 or less by year 17.

Deferred maintenance for the PMP is the preventative maintenance and reconstruction activities that are needed but not done. The PMP report estimates the amount of deferred maintenance at any given time based on the types of preventative maintenance and reconstruction activities projected to be performed, estimated costs for these activities, and total funds to be allocated versus the pavement system total needs. The PMP report further states that the longer asphalt pavement is left untreated, the rate of deterioration increases which increases the quantity and cost of the maintenance activities needed to rehabilitate the pavement.

FINDING: The timely application of crack sealing and slurry seals in the first 7-10 years of pavement life, with follow up preventive maintenance cycles (slurry seals, cape seals, thin overlays, etc.) every 5 years, will keep the PCI above 70 and avoid more rapid pavement deterioration, more expensive maintenance repairs, and total pavement reconstruction.

While the City currently has a citywide total system PCI of 76 (“Very Good “ mid range condition), nearly 20% of the system has fallen below a PCI of 70 - which is the point where pavement deteriorates more rapidly and preventive maintenance costs become more expensive. Of this amount, 3.19 miles (51,250 sq. yds) of pavement has failed, is unsafe, and is in the “Poor” category (PCI 25 to 49) or “Very Poor” category (PCI of 24 or less), which is only correctable with expensive major repairs and total reconstruction. This poor pavement condition creates safety and roadway hazards, causes damage to vehicles, generates condition complaints, and can reduce property values and property development in those areas.

DATA	Excellent (90-100)	Very Good (70-89)	Good (50-69)	Poor (25-49)	Very Poor (0-24)	Grand Total
Area (Sq. Ft.)	1,711,960	17,963,215	4,233,459	394,716	66,531	24,369,881
Area (Sq.Yds.)	190,218	1,995,913	470,383	43,857	7,392	2,707,765
Length (Center line feet)	36,736	458,327	101,180	14,625	2,218	613,086
Length (Center Line Miles) (% total mi.)	6.96 miles (6.0 %)	86.80 miles (74.7%)	19.16 miles (16.5%)	2.77 miles (2.4%)	0.42 miles (0.4%)	116.11 miles (100.0%)

The chart below lists the pavement conditions of significant streets in the City. As can be seen, many of the heavily used street have sections that are in need of pavement maintenance and repair, and even streets with very good average PCI ratings still have deferred maintenance sections in need of costly pavement maintenance and repair.

STREET NAME	HIGH PCI	LOW PCI	AVERAGE PCI
Monterey Road	93	56	74
Cochrane	82	73	81
East Dunne	94	55	75
West Dunne	100	67	84
Tennant	96	85	91
Watsonville	64	32	48
East Main	93	65	81
West Main	79	52	66
Butterfield	94	93	94

The Harris & Assoc. report identified six possible PMP budget scenarios - four of which were more than the current and five year projected budget allocations. The two scenarios with did us currently expected five year projections of annual funding resulted in the overall total system PCI deteriorating from a PCI of 76 to a PCI of 71 or 72 and an overall increase in deferred maintenance.

FINDING: The PMP study indicates the current expected capital project budget allocations for preventive pavement maintenance and reconstruction over the next 5 years are not sufficient over the long term to maintain a safe and sustainable streets pavement system, which will make it even more costly and difficult to prevent failure of the City's street pavement system.

When new, asphalt concrete has a uniform appearance and is free of cracks and imperfections. The surface is relatively smooth as the asphalt cement fills the spaces between the hard aggregates that provide the structure.



Though new, this street should receive its first slurry seal within seven years.

If not provided with preventative maintenance treatments, the surface begins to wear due to weather and use. One common indication of wear is “graveling” in which the hard aggregates stick out on the surface and the surface is no longer smooth. At this point, the street should receive a heavy (cape) seal coat at a minimum.



Another wear indication is cracked pavement. If left unsealed, cracks in the pavement allow water to easily penetrate the asphalt which compromises its structure and leads to potholes and other failures.



This street should be crack sealed and then slurry or cape sealed. An overlay could also be warranted.

When there is extensive cracking in an area, the pavement is considered “alligatored” and areas like this will need to be removed and replaced before any overlays or other treatments are applied to the area.



It is common for multiple failures to occur in the same location over time. This photo indicates that a series of temporary repairs have been made on San Pedro Ave. and extensive alligatored remains.



This street has large deep failures and will probably require complete reconstruction.



The Pavement Management Program Update report identified an annual Budget Needs Average for the City of Morgan Hill of \$6.250 million, for the analysis period (5 years) 2012-2016 to bring the City's PCI to 85. Five other PMP Budget Scenarios shown below were run to determine PCI levels and deferred maintenance levels for the next five (5) years. The software analyzed each pavement section and picks specific maintenance to maximize the improvement of the entire pavement system. Maintenance treatments are allocated to as many streets as the annual budget will allow.

For Morgan Hill, the following six annual PMP budget scenarios were generated in the Pavement Management Program Update report with 36% of the annual budget applied towards preventive maintenance, and 64% dedicated to overlays and reconstruction:

PMP Scenario 1. \$0 - No Funds spent:

PCI Trend: Decreases from 76 PCI in 2012 to 69 PCI in 2016.

Deferred Maintenance Trend: Increases from \$14.2 million in 2011 to \$25.5 million in 2016. ***Finding: Scenario not safe and sustainable level of funding***

PMP Scenario 2. \$750,000 Expected Annual Budget I:

PCI Trend: Decreases from 76 PCI in 2012 to a 71 PCI in 2016.

Deferred Maintenance Trend: Increases from \$14.2 million in 2011 to \$22 million in 2016. ***Finding: Scenario not safe and sustainable level of funding***

PMP Scenario 3. \$1,000,000 Expected Annual Budget II (Note: City's current approved 5 Year CIP FY12/13 thru FY16/17 Average Annual CIP Fund 308 Budget \$952,400):

PCI Trend: Decreases from a 76 PCI in 2012 to a 72 PCI in 2016.

Deferred Maintenance Trend: Increases from \$14.2 million in 2011 to \$21 million in 2016. ***Finding: Scenario not safe and sustainable level of funding.***

PMP Scenario 4A. \$2,500,000 - Maintain PCI:

PCI Trend: From a 76 PCI in 2012 to a 76 PCI in 2016.

Deferred Maintenance Trend: Increases from \$14.2 million in 2011 to \$15.7 million in 2016. ***Finding: Scenario near safe and sustainable level of funding (\$2,700,000/year level of funding needed to maintain both PCI and minimal increase (+\$1,500,000 in deferred maintenance end 2016).***

PMP Scenario 4B. \$2,700,000 - Maintain PCI:

PCI Trend: From a 76 PCI in 2012 to stay at a 76 PCI in 2016.

Deferred Maintenance Trend: Stays at approximately the same level of \$14.2 million in 2016. ***Finding: Scenario safe and sustainable level of funding (\$2,700,000/year level of funding needed to maintain both PCI and not increase in deferred maintenance).***

PMP Scenario 5. \$4,300,000 - Five point increase in PCI:

PCI Trend: Increase from 76 PCI in 2012 to an 81 PCI in 2016.

Deferred Maintenance Trend: Decreases from \$14.2 million in 2011 to \$4.8 million in 2016. ***Finding: Scenario exceeds minimum safe and sustainable level of funding.***

PMP Scenario 6. \$6,250,070 - Budget Needs Average:

PCI Trend: Increases from a 76 PCI in 2012 to an 85 PCI in 2016.

Deferred Maintenance Trend: Decreases from \$14.2 million in 2011 to \$0 in 2016.

Finding: Scenario exceeds minimum safe and sustainable level of funding.

These costs also do include any street specific limitations or specific conditions, such as “excessive crowning” limitations of the street section, which would require more costly wedge cutting and/or reconstruction. For major parts of both West Main Avenue and Monterey Road, for example, it may be infeasible to apply additional asphalt overlays without making the driveway entrances too steep due to the excessive crowning. In the past, much of this major street work was funded by the Redevelopment Agency and no replacement funding source has been identified.

An increase in deferred maintenance shows that necessary rehabilitation is not being performed. The total deferred maintenance in 2011 before any suggested maintenance is around \$14.2 million.

Harris & Associates suggested that, at a minimum, annual budgets for asphalt pavement work alone should be increased to \$2,850,000 each year. Raising the budget to \$2,850,000 will begin an increasing trend in overall pavement condition while reducing the amount of the deferred maintenance backlog. At this budget level, the overall PCI will increase from a 76 PCI in 2011 to a 77 after treatments are applied in 2016. An annual budget of \$2,700,000 each year would maintain the current PCI of 76 and deferred maintenance backlog of \$14.2 million.

Appendix D

Summary of Current Maintenance Activities

Current Maintenance Services

TABLE C presents the FY 2012/13 Community Services Department Maintenance Services Division’s current budgeted allocation for street maintenance activities.

TABLE C					
City of Morgan Hill Maintenance Services Division Labor Allocation & Budgeted Supplies, Electrical Usage, and Services Current FY 2012/13					
ITEM	Street Maintenance	Traffic Control & Lighting	Landscape Maintenance	Storm Drain	TOTAL
Labor <i>(fte)</i>	<i>1.68 fte</i>	<i>1.12 fte</i>	<i>1.68 fte</i>	<i>1.12 fte</i>	<i>5.60 fte</i>
Labor Expense	\$ 199,000	\$ 133,000	\$ 199,000	\$ 133,000	\$ 664,000
Contracted Services	\$ 120,000	\$ 203,000	\$ 86,000	\$ 28,000	\$ 454,000
Supplies and Other	\$ 79,000	\$ 52,000	\$ 79,000	\$ 52,000	\$ 262,000
Electrical Usage	\$ 7,000	\$ 256,000	\$ 12,000	\$ 15,000	\$ 290,000
TOTAL	\$ 405,000	\$ 644,000	\$ 376,000	\$ 228,000	\$ 1,653,000
	%	24.5%	39.0%	22.7%	13.8%
		100.0%			

1. Street Maintenance Program

Approximately 24.5% of the total allocated costs of the Maintenance Services Division, and 30% staff time are devoted to the safety and maintenance of the following street maintenance activities:

- Temporary street pavement maintenance and repairs (street system of 116 mi center line miles; 143 lane miles; 2.7 million sq. yds. Pavement)
- Unpaved alleys (0.7 centerline miles; 9,800 sq. yds.) - grading and repairs
- Downtown parking lots (9,680 sq. yds. pavement, 170 parking spaces) – sweeping, restriping, maintenance, and repairs
- Stamped concrete and brick pavers (8,200 sq. yds) – temporary repairs
- Sidewalks (150 miles) - temporary grinding, repairs, and replacements
- Curb and gutters (200 miles) - damage repairs and replacements
- Bridge (4 bridges) – maintenance and repairs

- Guard rail and fencing - emergency repairs
- Debris in roadway, litter, illegal dumping cleanup, and removals
- Hazardous and non-hazardous waste disposal

2. Traffic Control Maintenance Program

Approximately 39.0 % of the total allocated costs of the Maintenance Services Division, and 20% of the staff time are devoted to the safety and maintenance of the following traffic control maintenance activities:

- Striping and street markings (143 lane miles striping, multiple street markings and crosswalks, colored curbs) – annual contracted restriping program with paint and thermoplastic materials
- Traffic signals (39 signals, 15 flashing beacons/signs) – contracted maintenance
- Traffic and directional signs (2,700 traffic signs) - retro reflectivity testing, identification, and replacements
- Street name sign (760 street name signs) – replacements
- Street lights (2,100 HPS and 1,600 LED) – electrical usage, maintenance and replacement including conversions to LED [*Phase III & IV to convert remainder HPS street lights to LED proposed but unfunded. Failing wood streetlight poles need to be replaced with metal poles*]

3. Landscape Maintenance Program

Approximately 22.7% of the total allocated costs of the Maintenance Services Division, and 30% of the staff time is devoted to the safety and maintenance of the following landscape maintenance activities:

- Medians (12.9 Acres) - landscape and irrigation maintenance
- Brick planters (90 ea. 4'x4') – landscape, maintenance and repair
- Directional signs, and street furnishings (17 directional signs, 15 benches, 1 fountain, 1 kiosk, 1 bronze sculpture, multiple granite blocks, tree grates, and bollards) – service, maintain, graffiti removal, and repair
- City Street Trees (est. 5,000 -10,000+) – clearance and emergency trimming (citywide, including medians), arbor care, removals, and emergency response.
- Citywide trash cans (65 trash/recycle containers) - service and maintenance (*incl. pressure washing*)
- Animal damage control
- Pesticide control

4. Storm Drainage System Maintenance Program

Approximately 13.8% of the total allocated costs of the Maintenance Services Division, and 20% of the staff time is devoted to the safety and maintenance of the following storm drainage system maintenance activities:

- Storm drainage pipeline/box culvert system (98 mi. storm drain, 19 concrete box and wood culverts) – annual inspection, outfall repairs, pipeline flushing and debris removal
- Storm pump stations (4 stations) - maintenance, operation, and repair
- Open storm drainage channels (4 mi., Butterfield Channel) - vegetation removal for fire safety and remove drainage obstructions, maintenance, erosion repairs, and minimize property damage
- Storm drain inlets (est. 3,000 ea.) – inspect and clear debris
- Confined space inspections (box culverts, manholes)

Appendix E

Analysis of Current Maintenance Activities Compared to Safe and Sustainable Standards

Analysis of Current Maintenance Services

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
1. STREET MAINTENANCE PROGRAM		
Temporary minor street pavement maintenance, failing utility cuts, and pothole repairs	- Inspection and schedule action within 2 business days, and temporary pothole repairs within 2 days, and utility cuts within 10 business days	- Inspection within 2 business days, and action within 10 business days <i>[Finding: CMH has adequate resources for current level of 100 work orders annually for pothole repairs, utility cut replacement, and minor pavement failure repairs]</i>
Unpaved alleys	- Inspection and action/repairs to eliminate dangerous situation within two business days - Annual grading	- Inspection within 2 business days and action/repairs to eliminate dangerous situation within ten business days <i>[Finding: CMH has adequate resources for emergency repairs]</i> - No regrading program. <i>[Finding: CMH does not have adequate resources to implement annual grading]</i>
Public parking lots	- Sweeping as often as needed to control litter and debris - Preventive pavement maintenance 5-7 years - Restriping as needed	- Sweeping as often as needed to control litter and debris <i>[Finding: CMH downtown parking lot area weekly sweeping deemed adequate]</i> - Preventive pavement maintenance not currently done <i>[FINDING: Currently needs preventative pavement treatment of slurry sealing and need to plan for and have future regular and preventive maintenance budget allocations for this work]</i> - Restriping currently not being done <i>[FINDING: Currently needs restriping, and need to plan for, and have future regular and preventive maintenance</i>

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
		<i>budget allocations for this work]</i>
Stamped concrete and brick pavers	<ul style="list-style-type: none"> - Remove displaced pavers and temporary asphalt backfill if safety hazard within two business days - Repair and replace damaged paver areas on a regular schedule every 2-5 years 	<ul style="list-style-type: none"> - Remove displaced pavers and backfill with temporary asphalt if safety hazard within two business days <i>[Finding: CMH has adequate resources for emergency repairs]</i> - Repair and replace damaged paver areas on a non-regular schedule based on budget allocations <i>FINDING: [CMH backlog of displaced and temporary AC backfilled areas which need pavers replaced]</i>
Sidewalks	<p>Two different Standard Programs In Practice:</p> <p>1) When Public Agency responsible and performs annual budgeted program work:</p> <ul style="list-style-type: none"> • Temporary grinding and AC ramping displaced sidewalks for safety purposes within 2 business days of reporting. • Repair and replacement on a regular basis through an annual CIP program 	<ul style="list-style-type: none"> • CMH responsible program: Inspection within 2 business days. Temporary grinding and AC ramping displaced sidewalks for safety purposes within 10 business days of reporting. <i>[Finding: CMH has adequate resources for emergency repairs, but slower response than standard]</i> • Annual repair and replacement program in conjunction with Street PMP CIP. <i>[FINDING: CMH completes 60 work orders per year, but inadequate and has current backlog of 400 damage replacement locations]</i>

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
	<p>or,</p> <ul style="list-style-type: none"> - 2) Private property owner responsible and public agency notifies owner of corrections required and enforces standards 	<ul style="list-style-type: none"> - Not currently applicable in CMH under current practices. Initiating this approach would require direction from the City Council to prepare an ordinance instituting this change
Curb and gutters	<ul style="list-style-type: none"> - Include curb & gutter repair work with annual street pavement CIP. Prioritize based on safety, function, and displacement measurement 	<ul style="list-style-type: none"> - Curb & gutter repair work done in conjunction with annual street PMP CIP <i>[FINDING: CMH budget allocation inadequate as estimated backlog of 8,000 lin. ft damaged and displaced curb and gutter at over 400 locations not responded to currently]</i>
Bridges	<ul style="list-style-type: none"> - Make CIP bridge repairs when needed based on State Dept. of Transportation Bridge Inspection and Repair program where funds available on 88.53%/11.47% basis for qualifying projects 	<ul style="list-style-type: none"> - Make CIP bridge repairs when needed, using State Dept. of Transportation Bridge Inspection and Repair program <i>[Finding: CMH has 4 eligible bridge structures to maintain and the State inspection program has determined these bridges are not currently structurally deficient or functionally obsolete]</i>
Guard rail and fencing	<ul style="list-style-type: none"> - Barricade and sign for traffic safety, perform emergency repairs on a timely basis, and file insurance claims for accident damage recovery 	<ul style="list-style-type: none"> - Barricades and signs placed for traffic safety, perform emergency repairs on a timely basis, and file insurance claims for accident damage recovery <i>[Finding: CMH has adequate resources and response to barricade damaged locations and implement contracted repairs when insurance claim funds received. No program to inspect and replace older guard rails which do not meet current Caltrans standards.]</i>
Debris in roadway, litter, Illegal dumping cleanup,	<ul style="list-style-type: none"> - Respond immediately to emergency situations, and 	<ul style="list-style-type: none"> - Respond immediately to emergency situations, and complete cleanup,

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
and removals	complete cleanup, removals, and disposal in a timely manner	removals, and disposal in a timely manner. Minimal staff and funds available for non-emergency litter removal <i>[Finding: CMH responsible and has adequate resources to respond to approximately 75 work orders per year]</i>
Hazardous and non-hazardous waste disposal	- Respond to emergency and non-emergency hazardous and non-hazardous waste disposal	- Respond to emergency and non-emergency hazardous and non-hazardous waste disposal <i>[Finding: CMH maintains adequate budget allocation to respond to needs]</i>

2. TRAFFIC MAINTENANCE PROGRAM

Striping, street markings, and painted colored curbing	<ul style="list-style-type: none"> - Annual restriping program, which repaints traffic control striping and markings every two years for collectors, arterials, and two to four years residential; if thermoplastic striping then re-apply every 7 – 10 years - Repainting colored curbing every 18 to 24 months - Most jurisdictions do not paint fire hydrant curbing; enforce based on CA Motor Vehicle Code. Those that do repaint 18- 	<ul style="list-style-type: none"> - Annual inspection and restriping program <i>[CMH contracts, 2.5 - 4 miles restriping annually plus 60 – 100 ea. street markings including crosswalks with 33% to 50% thermoplastic striping. Allocated budgeted currently adequate if the annual Street PMP CIP includes expanded expenses for striping]</i> - Discontinued repainting all colored curbing <i>[FINDING: CMH budgeted allocation currently inadequate]</i> - Repaint some fire hydrant curbing <i>[FINDING: Repaint based on time available, but more than a 2 year cycle, so CMH budgeted allocation currently inadequate]</i>
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MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
	24 month cycle	
Traffic signals	<ul style="list-style-type: none"> - Regular maintenance and repair directed by dedicated public agency staff - Battery backup often provided for critical traffic signal locations - Traffic signal system contains public safety preemption system 	<p>Provide dedicated staff and regular contracted maintenance and repair <i>[Finding: CMH complies with dedicated contracted operation, and maintenance.]</i></p> <ul style="list-style-type: none"> - No traffic signals currently provided with battery backup <i>[Finding: CMH needs to determine if any traffic signals warrant battery backup]</i> - Current Emtrac public safety preemption system not uniform or complete to control all traffic signals <i>[Finding: CMH needs to determine if need warranted to provide functional public safety pre-emption system with new Fire Department]</i>
Traffic signs	- Regular retroreflectivity testing, identification, and replacement program	<p>- Recently implemented traffic sign retroreflectivity testing, identification, and replacement program cycle on 5 year basis <i>[Finding: CMH adequately budgeted for and started a program to inspect all traffic signs, and replace estimated 1/3 deficient traffic signs]</i></p>
Street name signs	- Regular sign replacement program on 15-20 year cycle	<p>- Recently implemented regular replacement program on 15-20 year cycle <i>[Finding: CMH adequately budgeted and has started a 5 year program to replace all non-illuminated street name signs, thereafter 15-20 cycle program for inspection and replacements]</i></p>
Street lights	- Regular program for	- Regular program for contracted

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
	<p>inspection, response to complaints, maintenance, replacements, and energy usage expenses</p> <p>- Program for replacement of damaged and deteriorating wood and metal street light poles before failure</p>	<p>inspection, response to complaints, maintenance, and street light replacements, and responsible for energy usage expenses</p> <p><i>[Finding: CMH adequately budgeted for inspection, response to complaints, maintenance, and street light replacements, but relies on outage reports from residents, businesses, and volunteers. Staff active in converting remaining 2,100 high pressure sodium lights to lower energy using LED street lights through RDCS program.]</i></p> <p>- No existing replacement program except when pole fails</p> <p><i>[FINDING: [No current inspection and replacement program for aging wood or metal street light poles. No repainting program for metal poles.]</i></p>
3. LANDSCAPE MAINTENANCE PROGRAM		
Medians	- Regular weekly landscape and irrigation maintenance, including mulching, plant replacements, and irrigation system repairs	- Regular weekly landscape and irrigation maintenance, including mulching, and irrigation system repairs, but no plant replacements or irrigation system refurbishment or upgrading <i>[FINDING: CMH budget allocation insufficient as medians over 10 years old, understory plantings depleted and needed to be relandscaped, hardscape repairs, and, irrigation system upgrading needed.]</i>
Road shoulder and park strips	- Weed abatement for fire prevention on undeveloped property per County regulations	- Weed abatement for fire prevention on undeveloped property per County regulations <i>[Finding: CMH maintains adequate</i>

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
		<i>budget allocation for fire prevention but not sufficient to maintain neat edge of roadway/sidewalk appearance]</i>
Brick planters	<p>- Regular service to care for the landscaped decorative elements as follows:</p> <ul style="list-style-type: none"> • plant replacements as needed • weekly landscape and irrigation maintenance, including mulching, , irrigation system repairs • annually trim trees, and make planter box brick repairs in a timely manner 	<p>- Combined City, Business Improvement District (PBID), and volunteer maintenance program for 90 landscaped brick planters as follows:</p> <ul style="list-style-type: none"> • Volunteers providing plant replacements <i>[Finding: Volunteers responding to needs]</i> • PBID responding to needs to provide adequate landscape and irrigation maintenance, including mulching, , irrigation system repairs <i>[Finding: PBID responding to needs]</i> • CMH has backlog of planter box repairs and tree trimming. <i>[FINDING: CMH inadequate budget allocation resulted in significant backlog of tree trimming. PBID is just now taking over brick maintenance]</i>
Directional signs, and street furnishings (benches, fountain, kiosk, bronze sculpture, multiple granite blocks, tree grates, and bollards)	<p>- Regular weekly maintenance and repairs,</p> <p>- Removal of any graffiti within 2 business days.</p>	<p>- Regular weekly program for maintenance and repairs. <i>[Finding: CMH maintains adequate budget allocation to provide service and rely on volunteers to clean bronze sculpture.]</i></p> <p>- Removal of any reported graffiti within 2 business days, and when discovered</p>

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ [FINDINGS: <i>Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable</i>]
City Street Trees <i>(continued)</i>	<ul style="list-style-type: none"> • Typically jurisdiction joins Tree City USA program (required Arbor Day program, and tree care program budget of at least \$2 per capita per year) • Prepared Street Tree Inventory <hr/> <p>-- Or, 2) Private property owner responsible for care, maintenance, and damages, and public agency notifies owner of corrections needed and enforces standards</p>	<p><i>Estimated 400 locations of problem City Street trees causing unsafe conditions and excessive damages to infrastructure, and street trees should be replaced]</i></p> <ul style="list-style-type: none"> • CMH not a Tree City USA participant <i>[FINDING: CMH not Tree City USA certified so is not eligible for potential grants from several organizations.]</i> • No street tree inventory available and estimates of number of Street Trees varies from 5,000 to over 10,000. <i>[FINDING: CMH needs Street Tree inventory prepare, and if Tree City USA can apply for grant to cover cost.]</i> <hr/> <p>- Not currently applicable in CMH under current practices. Initiating this approach would require direction from the City Council to prepare an ordinance instituting this change</p>
Citywide trash cans	- Regular weekly service and maintenance, and waste disposal	- Regular weekly service and maintenance, and waste disposal program <i>[Finding: CMH adequate resources,</i>

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ [FINDINGS: <i>Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable</i>]
		<i>including doing pressure washing of containers as required – now shifted to PBID]</i>
Animal damage control	- Contract services when needed	- Contract services when needed [Finding: <i>CMH adequate resources</i>]
Pesticide control	- Contract services when needed	- Contract services when needed [Finding: <i>CMH adequate resources</i>]
4. STORM DRAIN SYSTEM MAINTENANCE PROGRAM		
Storm drain pipeline/culvert system Storm drain pipeline/culvert system <i>(continued)</i>	<p>- Storm drain system pipeline, outfalls, box culverts, and overcrossings,</p> <ul style="list-style-type: none"> • Annual inspections, pipeline flushing and debris removal, and emergency repairs • Contracted structural and functionality inspection of critical storm drain pipelines, outfalls, box culverts, and overcrossings once every 5 years 	<p>- Storm drain system pipeline, box culverts, overcrossings, and outfalls,</p> <ul style="list-style-type: none"> • Reactive inspection and maintenance program - Pipeline inspections, pipeline flushing and debris removal upon discovery of problem. No budget allocation for large emergency repairs <i>[FINDING: CMH inadequate resources for inspection of all storm pipelines, box culverts, overcrossings, and outfalls, flushing, and debris removal, and emergency repairs]</i> • Annual culvert and outfall visual inspections at critical locations only for functionality and blockages. <i>[FINDING: CMH inadequate resources for any comprehensive structural inspections of storm drainage infrastructure]</i>
Storm drain pump stations	<p>- Storm drain pump stations</p> <ul style="list-style-type: none"> • Operation of storm drain pump stations by City staff and/or 	<p>- Storm drain pump stations</p> <ul style="list-style-type: none"> • CMH (non-Maintenance Services staff), and a contractor operate 4 storm drainage pump stations.

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
Storm drain pump stations (continued)	contractor <ul style="list-style-type: none"> • Annual maintenance and repair • CIP for pump replacement, and emergency electrical contractual services • CIP for future pump replacements and major pump station repair (20-25 year cycle) 	<i>[Finding: CMH adequate resources]</i> <ul style="list-style-type: none"> • CMH (non-Maintenance Services staff), and a contractor perform annual maintenance and repairs for 4 storm drainage pump stations. <i>[Finding: CMH adequate resources]</i> • No CIP for pump replacement, and emergency electrical contractual services, <i>[FINDING: CMH no budget allocation for CIP for pump replacement, and emergency electrical contractual services.]</i> • No CIP for future pump replacements and major pump station repair (20-25 year cycle) <i>[No CIP for future pump replacements and major pump station repair (20-25 year cycle)]</i>
Open storm drainage channel (Butterfield Channel)	- Annual vegetation removal for fire safety and functionality, levee/slope maintenance, and erosion repairs	- Annual program vegetation removal for fire safety and functionality, channel maintenance, and erosion repairs . <i>[Finding: CMH adequate resources unless significant erosion failures. No program to evaluate silting in channel and reduction in capacity.]</i>
Storm drain inlets	-At least annually inspect and clear debris from all storm drain inlets before rain season - Assist street sweeping program in keeping litter	- Annual program to inspect and clear debris from all storm drain inlets before rainy season <i>[Finding: CMH adequate resources]</i> - Assists street sweeping program in keeping litter and debris from

MAINTENANCE PROGRAM/ACTIVITIES	SAFE & SUSTAINABLE PRACTICES & STANDARDS	CITY OF MORGAN HILL LEVEL OF MAINTENANCE SERVICE PROVIDED/ <i>[FINDINGS: Green - Ok; Black-inadequate, but not unsafe, OR special issues; Red – Substandard and Nonsustainable]</i>
	and debris from accumulating on and into storm drain inlets.	accumulating on and into storm drain inlets <i>[Finding: CMH adequate resources]</i>
Confined space rescue, and inspections	- Conduct confined space rescue, and inspections when necessary per OSHA regulations, and/or rely on Fire responders for confined space rescue	- CMH relies on Fire responders for confined space rescue. Conduct confined space inspection when necessary per OSHA regulations <i>[CMH staff not certified for confined space rescue or inspections, so necessary to rely on Fire responders for confined space rescue, and to contract out for confined space inspection services. CMH adequate resources for only existing contractual needs.]</i>

Appendix F

Detailed Budget Scenarios

A. OVERVIEW

This section presents all of the identified additional budget allocations which would result in safe and sustainable Street Infrastructure necessary during the upcoming five year period FY 2013/14 – 2017/18 and developed five Budget Allocation Scenarios. Not all these Budget Allocation Scenarios (specifically Scenarios 1 and 2) result in an achievement of a safe and sustainable Streets Infrastructure due to acknowledgement that budgetary funds may not be available. **Appendix B** discusses the impacts if a less than safe and sustainable Streets Infrastructure Budget Allocation scenario is selected and maintenance deferred.

TABLES I-1 through I-5 presents Budget Allocation Scenarios discussed in this Section. A summary description of these Budget Allocation Scenarios is as follows:

- **Budget Allocation Scenario 1 (TABLE I-1)** presents only the current budget allocations, and results with a street pavement condition decreasing from a PCI 76 to PCI 72, deferred street pavement maintenance increasing from \$14.2 million to \$21 million, the Street Infrastructure maintenance service program current backlogs increasing, inspection and maintenance needs would not be met, and deferred maintenance service activities would grow, all of which have been identified with a Streets Infrastructure which is **not sustainable.**
- **Budget Allocation Scenario 2 (TABLE I-2)** uses the current PMP CIP Fund 308 budget allocation, and results with a street pavement condition decreasing from a PCI 76 to PCI 72, deferred street pavement maintenance increasing from \$14.2 million to \$21 million. This scenario includes all one-time additional maintenance service cost items (Downtown Parking Lot slurry sealing and striping, paver repairs, brick planter repairs and renovation, Street Tree inventory and Tree City USA certification, storm drain culvert repairs, storm drain pump station emergency pump replacement), plus several high priority on-going maintenance service program enhancements (sidewalk repairs, resume Street Tree trimming {8 year cycle}, storm drain pipeline and culverts detailed inspections). The result of this Budget Allocation Scenario average annual level of additional investment of \$143,000 per year (\$717,000 over 5 years) is **still not fully sustainable.**
- **Budget Allocation Scenario 3 (TABLE I-3)** increases the PMP CIP Fund 308 investment by approximately \$1.57 million per year to the minimum sustainable street pavement maintenance level which maintains the current pavement condition index (PCI) of 76, still have deferred street pavement maintenance (\$15.7 million), and includes the entire one-time and ongoing additional maintenance service budget allocations identified. This Budget Allocation Scenario, which includes an additional budget allocation investment of an average annual \$1,962,000 per year (\$9,810,000 over 5 years), would result in a **safe and sustainable Streets Infrastructure, with no deferred street maintenance services, no**

decrease in pavement condition, and no increase in deferred street pavement maintenance.

- **Budget Allocation Scenario 4 (TABLE I-4)** increases the PMP CIP Fund 308 investment by approximately \$3.37 million per year to sustainable level which would improve the current pavement condition index (PCI) of 81, reduce the deferred street pavement maintenance (from \$14.2 million to \$4.8 million), and includes the entire one-time and ongoing additional maintenance service budget allocations identified. This Budget Allocation Scenario, which includes an additional budget allocation investment of an average annual \$3,789,000 per year (\$18,945,000 over 5 years), would result in a safe and sustainable with no deferred street maintenance services, and with a significant decrease in the amount of deferred pavement maintenance and significantly improved street pavement condition.
- **Budget Allocation Scenario 5 (TABLE I-5)** increases the PMP CIP Fund 308 investment by approximately \$5.32 per year and would eliminate the current deferred street pavement maintenance (\$14.2 million), improve the current pavement condition index (PCI) to 85, and reduce the future PMP CIP budget allocation required significantly, and includes the entire one-time and ongoing additional maintenance service budget allocations identified. This Budget Allocation Scenario, which includes an additional budget allocation investment of an average annual \$5,787,000 per year (\$28,935,000 over 5 years), would result in a safe and sustainable with no deferred street maintenance services, and the best possible street pavement condition with street pavement preventative maintenance costs essentially eliminated for the following five year period.

B. MAINTENANCE PROGRAM IMPROVEMENT BUDGET ALLOCATION SCENARIOS

1. Budget Allocation Scenario 1 – Status quo current budget allocations, and would result in deteriorating street pavement condition (*from PCI 76 to PCI 72*), increased deferred maintenance service, and increased maintenance service impacts

Budget Allocation Scenario 1 (TABLE I-1) includes the current PMP CIP Fund 308 budget allocations of an average annual investment of \$927,400 over five years (\$4,637,000 total over 5 years), and an average annual General Fund Operating budget allocation of \$1,842,200 (\$9,211,000 total over 5 years) for the current Street Infrastructure maintenance service programs. These budget allocation amounts were approved in the current 5 year budget allocation plan. As a result of this level of investment, the current street pavement condition would deteriorate from PCI 76 to PCI 72, and deferred pavement maintenance would increase by over \$7 million to \$21 million. The Street Infrastructure maintenance service program current backlogs would increase, inspection and maintenance needs would not be met, and deferred maintenance service activities would grow.

FINDING: This Budget Allocation Scenario is not sustainable.

TABLE I-1 - BUDGET ALLOCATION SCENARIO 1 (1,000s)

OPTIONS	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	<u>TOTAL</u>
BUDGET ALLOCATION SCENARIO 1 (Current Budget Allocations only)						
1. Pavement Mgmt Program (PMP) a. <i>Base cost/Current PMP CIP Fund 308 Budget Allocation* **</i>	982	975	980	850	850	4,637
2. <i>Base Maintenance Services Division Current General Fund Budget Allocation*</i>	<u>1,719</u>	<u>1,779</u>	<u>1,839</u>	<u>1,901</u>	<u>1,973</u>	<u>9,211</u>
TOTAL BUDGET ALLOCATION SCENARIO 1 <i>Finding: UNSUSTAINABLE</i>	\$2,701	\$2,754	\$2,819	\$2,751	\$2,823	\$13,848
Amount over Current Budget Allocations	0	0	0	0	0	0
Note *Actual current budget allocation from 5 year plan FY13/14 to FY17/18 **This PMP CIP Fund 308 Budget Scenario would yield an estimated PCI 72 in FY16/17						

2. Budget Allocation Scenario 2 – Enhanced Status Quo, but would same level deteriorating street pavement condition (from PCI 76 to PCI 72), and some reduction in maintenance service backlogs, and some reduced maintenance service impacts

Budget Allocation Scenario 2 (TABLE I-2) includes the current PMP CIP Fund 308 budget allocation of an average of \$927,400 over five years (\$4,637,000 total over 5 years), an average annual General Fund Operating budget allocation of \$1,842,200 over five years (\$9,211,000 total over 5 years) for the current Street Infrastructure maintenance service programs, plus additional budget allocations for all the one-time additional cost and several high priority, high impact on-going additional budget allocations for maintenance service program safe and sustainable enhancements as follows,

One time maintenance service additional budget allocations (\$107,000):

- Downtown parking lots slurry and striping
- Concrete/brick paver repairs and replacements
- Brick planters repair and renovation
- Certify as Tree City USA
- Prepare Street Tree inventory
- Storm drain pipeline and culvert repairs
- Emergency storm drain pump station repairs and pump replacement CIP

On-going additional high priority, high impact maintenance service safe and sustainable additional budget allocations (\$122,000 average annual; \$610,000 over 5 years)

- Sidewalk repairs
- Resume regular Street Tree trimming on an eight (8) year cycle
- Annual enhanced storm drain pipeline and culverts contracted inspections and repairs

With this Budget Allocation Scenario 2, as a result of this level of additional budget allocation investment (\$143,400 average annual; \$717,000 over 5 years), the current street pavement condition would continue to deteriorate from PCI 76 to PCI 72, and deferred pavement maintenance would increase by over \$7 million to \$21 million. As a result of the increased investment the one time budget allocations for safe and sustainable maintenance service would eliminate the specific deferred maintenance services backlog, resume and improve the Street Tree program, and provide funds for emergency storm drain pump station pump replacement. The investment would also reduce some high impacts by resuming necessary Street tree trimming, addressing a large backlog of sidewalk repairs, and provide necessary inspection and evaluation of the storm drain pipelines and culverts. For the remaining areas of the Street

Infrastructure program current backlogs would increase, inspection and maintenance needs would not be met, and deferred maintenance services activities would grow.

FINDING: This Budget Allocation Scenario is not sustainable.

TABLE I-2 - BUDGET ALLOCATION SCENARIO 2 (1,000s)

BUDGET ALLOCATION SCENARIO 2	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	<u>TOTAL</u>
<i>1. Pavement Mgmt Program (PMP)</i>						
<i>a. Base cost/Current CIP Budget Allocation*</i>	982	975	980	850	850	4,637
<i>b. Additional PMP CIP Budget Allocation**</i>	-	-	-	-	-	-
c. Subtotal PMP CIP Fund 308	982	975	980	850	850	4,637
2. Base Maintenance Services Division Current General Fund Budget Allocation*	1,719	1,779	1,839	1,901	1,973	9,211
3. Downtown Park Lot Slurry & striping	17					17
4. Concrete/brick Paver Repairs	12					12
5. Sidewalk Repairs	72	72	72	72	72	360
6. Curb & Gutter Repairs						0
7. Repaint Colored Curbs						0
8. Replace Aging Wood Streetlight Poles						0
9. Renovate Medians						0
10. Repair & Renovate Brick Planters	27					27
11. Certify as Tree City USA	1					1
12. Prepare Street tree Inventory	10					10
13. Remove/Replace Street Trees						0
14. Resume Regular Street Tree Trimming Eight (8) Year Cycle	45	45	45	45	45	225
15. Storm Drain Pipeline & Culverts Inspections & Repairs	5	25	5	5	5	45
16. Emergency Storm Pump Station Repairs & Pump Replacement	20					20
17. Storm Drain Pump Station Rehabilitation Amortization						0
18. Subtotal Additional Items (3. Thru 17.)	209	142	122	122	122	717
TOTAL BUDGET ALLOCATION SCENARIO 2	\$2,910	\$2,896	\$2,941	\$2,873	\$2,945	\$14,565
Finding: UNSUSTAINABLE						
Amount over Current Budget Allocations	+ 209	+ 142	+ 122	+ 122	+ 122	+ 717
Note *Actual current budget allocation from 5 year plan FY13/14 to FY17/18						
**This PMP CIP Fund 308 Budget Scenario would yield an estimated PCI 72						

3. Budget Allocation Scenario 3 – Safe and Sustainable but would only maintain current street pavement condition

Budget Allocation Scenario 3 (Table I-3) includes the current PMP CIP Fund 308 budget allocation of an average of \$927,400 over five years (\$4,637,000 total over 5 years), increases this PMP CIP Fund 308 budget allocation by approximately \$1.57 million per year to a minimum sustainable street pavement level which would maintain the current pavement condition index (PCI) of 76, and deferred pavement maintenance would increase minimally (+\$1.5 million to \$15.7 million). This Budget Allocation Scenario includes an average annual General Fund Operating budget allocation of \$1,842,200 (\$9,211,000 total over 5 years) for current Street Infrastructure maintenance service programs, plus additional budget allocations for all the one-time additional cost and on-going additional budget allocations for safe and sustainable maintenance service program enhancements as follows,

One time maintenance service additional budget allocations (\$107,000):

- Downtown parking lots slurry and striping
- Concrete/brick paver repairs and replacements
- Brick planters repair and renovation
- Certify as Tree City USA
- Prepare Street Tree inventory
- Storm drain pipeline and culvert repairs
- Emergency storm drain pump station repairs and pump replacement CIP

On-going additional high priority, high impact maintenance service safe and sustainable additional budget allocations (\$368,000 average annual; \$1,840,000 over 5 years):

- Sidewalk repairs
- Curb and gutter repairs
- Repaint on a regular basis all colored curbs
- Replace aging wood streetlight poles
- Renovate medians
- Remove and replace problem Street Trees
- Resume regular Street Tree trimming on an eight (8) year cycle
- Annual enhanced storm drain pipeline and culverts contracted inspections and repairs
- Storm drain pump station rehabilitation amortization CIP.

With this Budget Allocation Scenario 3, as a result of this level of additional budget allocation investment (\$1,962,000 average annual; \$9,810,000 over 5 years) the street pavement condition would not deteriorate further, and deferred pavement

maintenance would only increase minimally (+\$1.5 million to \$15.7 million), and all current maintenance service backlogs and deferred maintenance activities would be eliminated, and inspection and maintenance needs met.

FINDING: safe and sustainable Streets Infrastructure, with no deferred street maintenance services, no decrease in pavement condition, and no increase in deferred street pavement maintenance.

TABLE I-3 - BUDGET ALLOCATION SCENARIO 3 (1,000s)

BUDGET ALLOCATION SCENARIO 3	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	TOTAL
<i>1. Pavement Mgmt Program (PMP)</i>						
<i>a. Base cost/Current CIP Budget Allocation*</i>	982	975	980	850	850	4,637
<i>b. Additional PMP CIP Budget Allocation**</i>	1,518	1,525	1,520	1,650	1,650	7,863
<i>c.. Subtotal PMP CIP Fund 308</i>	2,500	2,500	2,500	2,500	2,500	12,500
<i>2. Base Maintenance Services Division</i>						
Current General Fund Budget Allocation*	1,719	1,779	1,839	1,901	1,973	9,211
3. Downtown Park Lot Slurry & striping	17					17
4. Concrete/brick Paver Repairs	12					12
5. Sidewalk Repairs	72	72	72	72	72	360
6. Curb & Gutter Repairs	96	96	96	96	96	480
7. Repaint Colored Curbs	32	32	32	32	32	160
8. Replace Aging Wood Streetlight Poles	5	5	5	5	5	25
9. Renovate Medians	25	25	25	25	25	125
10. Repair & Renovate Brick Planters	27					27
11. Certify as Tree City USA	1					1
12. Prepare Street tree Inventory	10					10
13. Remove/Replace Street Trees	38	38	38	38	38	190
14. Resume Regular Street Tree Trimming Eight (8) Year Cycle	45	45	45	45	45	225
15. Storm Drain Pipeline & Culverts Inspections & Repairs	5	25	5	5	5	45
16. Emergency Storm Pump Station Repairs & Pump Replacement	20					20
17. Storm Drain Pump Station Rehabilitation Amortization	50	50	50	50	50	250
18. Subtotal Additional Items (3. Thru 17.)	455	388	368	368	368	1,947
TOTAL BUDGET ALLOCATION SCENARIO 3	\$4,674	\$4,667	\$4,707	\$4,769	\$4,841	\$23,658
Finding: SAFE AND SUSTAINABLE						
Amount over Current Budget Allocations	+ 1,973	+ 1,913	+ 1,888	+ 2,018	+ 2,018	+ 9,810
Note *Actual current budget allocation from 5 year plan FY13/14 to FY17/18.						
**This PMP CIP Fund 308 Budget Scenario would yield an estimated PCI 76						

4. Budget Allocation Scenario 4 – Safe and Sustainable and improvement street pavement condition

Budget Allocation Scenario 4 (Table I-4) includes the current PMP CIP Fund 308 budget allocation of an average of \$927,400 over five years, (\$4,637,000 total over 5 years), increases the PMP CIP Fund 308 budget allocation by approximately \$3.37 million per year, which is above the minimum sustainable street pavement level and would improve the pavement condition index (PCI) to 81, and reduce the amount of deferred pavement maintenance from \$14.2 million to \$4.8 million. This Budget Allocation Scenario includes an average annual General Fund Operating budget allocation of \$1,842,200 (\$9,211,000 total over 5 years) for current Street Infrastructure maintenance service programs, plus additional budget allocations for all the one-time additional cost and on-going additional budget allocations for safe and sustainable maintenance service program enhancements as follows,

One time maintenance service additional budget allocations (\$107,000):

- Downtown parking lots slurry and striping
- Concrete/brick paver repairs and replacements
- Brick planters repair and renovation
- Certify as Tree City USA
- Prepare Street Tree inventory
- Storm drain pipeline and culvert repairs
- Emergency storm drain pump station repairs and pump replacement CIP

On-going additional high priority, high impact maintenance service safe and sustainable additional budget allocations (\$395,000 average annual; \$2,082,000 over 5 years):

- Sidewalk repairs
- Curb and gutter repairs
- Repaint on a regular basis all colored curbs
- Replace aging wood streetlight poles
- Renovate medians
- Remove and replace problem Street Trees
- Resume regular Street Tree trimming on an five (5) year cycle
- Annual enhanced storm drain pipeline and culverts contracted inspections and repairs
- Storm drain pump station rehabilitation amortization CIP.

With this Budget Allocation Scenario 4, as a result of this level of additional budget allocation investment (\$3,789,000 average annual; \$18,945,000 over 5 years) the street pavement condition improves, and deferred pavement maintenance would be reduced by \$14.2 million to \$4.8 million, and all current maintenance services

backlogs and deferred maintenance activities would be eliminated, and inspection and maintenance needs met, and Street Tree trim cycle accelerated to a five (5) year trimming cycle.

FINDING: safe and sustainable with no deferred street maintenance services, and with a significant decrease in the amount of deferred pavement maintenance and significantly improved street pavement condition.

TABLE I-4 - BUDGET ALLOCATION SCENARIO 4 (1,000s)

BUDGET ALLOCATION SCENARIO 4	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	<u>TOTAL</u>
1. Pavement Mgmt Program (PMP)						
a. <i>Base cost/Current CIP Budget Allocation*</i>	982	975	980	850	850	4,637
b. Additional PMP CIP Budget Allocation**	3,318	3,325	3,320	3,450	3,450	16,863
c. Subtotal PMP CIP Fund 308	\$4,300	\$4,300	\$4,300	\$4,300	\$4,300	\$21,500
2. <i>Base Maintenance Services Division</i>						
Current General Fund Budget Allocation*	1,719	1,779	1,839	1,901	1,973	9,211
3. Downtown Park Lot Slurry & striping	17					17
4. Concrete/brick Paver Repairs	12					12
5. Sidewalk Repairs	72	72	72	72	72	360
6. Curb & Gutter Repairs	96	96	96	96	96	480
7. Repaint Colored Curbs	32	32	32	32	32	160
8. Replace Aging Wood Streetlight Poles	5	5	5	5	5	25
9. Renovate Medians	25	25	25	25	25	125
10. Repair & Renovate Brick Planters	27					27
11. Certify as Tree City USA	1					1
12. Prepare Street tree Inventory	10					10
13. Remove/Replace Street Trees	38	38	38	38	38	190
14. Resume Regular Street Tree Trimming Five (5) Year Cycle	72	72	72	72	72	360
15. Storm Drain Pipeline & Culverts Inspections & Repairs	5	25	5	5	5	45
16. Emergency Storm Pump Station Repairs & Pump Replacement	20					20
17. Storm Drain Pump Station Rehabilitation Amortization	50	50	50	50	50	250
18. Subtotal Additional Items (3. Thru 17.)	482	415	395	395	395	2,082
TOTAL BUDGET ALLOCATION SCENARIO 4	\$6,501	\$6,494	\$6,534	\$6,596	\$6,668	\$32,793
Finding: SAFE AND SUSTAINABLE						
Amount over Current Budget Allocations	+ 3,800	+ 3,740	+ 3,715	+ 3,845	+ 3,845	+ 18,945
Note *Actual current budget allocation from 5 year plan FY13/14 to FY17/18						
**This PMP CIP Fund 308 Budget Scenario would yield an estimated PCI 81						

5. Budget Allocation Scenario 5 – Safe and Sustainable and street pavement condition at best possible level

Budget Allocation Scenario 5 (Table I-5) includes the current PMP CIP Fund 308 budget allocation of an average of \$927,400 over five years, (\$4,637,000 total over 5 years), increases the PMP CIP Fund 308 budget allocation by approximately \$5.32 million per year, which is above the minimum sustainable street pavement level and would improve the pavement condition index (PCI) to 85, and eliminate the amount of deferred pavement maintenance of \$14.2 million. This Budget Allocation Scenario includes an average annual General Fund Operating budget allocation of \$1,842,200 (\$9,211,000 total over 5 years) for current Street Infrastructure maintenance service programs, plus additional budget allocations for all the one-time additional cost and on-going additional budget allocations for safe and sustainable maintenance service program enhancements as follows,

One time maintenance service additional budget allocations (\$107,000):

- Downtown parking lots slurry and striping
- Concrete/brick paver repairs and replacements
- Brick planters repair and renovation
- Certify as Tree City USA
- Prepare Street Tree inventory
- Storm drain pipeline and culvert repairs
- Emergency storm drain pump station repairs and pump replacement CIP

On-going additional high priority, high impact maintenance service safe and sustainable additional budget allocations (\$443,000 average annual; \$2,215,000 over 5 years):

- Sidewalk repairs
- Curb and gutter repairs
- Repaint on a regular basis all colored curbs
- Replace aging wood streetlight poles
- Renovate medians
- Remove and replace problem Street Trees
- Resume regular Street Tree trimming on an a three (3) year cycle
- Annual enhanced storm drain pipeline and culverts contracted inspections and repairs
- Storm drain pump station rehabilitation amortization CIP.

With this Budget Allocation Scenario 5, as a result of this level of additional budget allocation investment (\$5,787,000 average annual; \$28,935,000 over 5 years) the street pavement condition improves, and deferred pavement maintenance backlog of \$14.2 million would be eliminated, and street pavement preventative maintenance costs essentially eliminated for the following five years. Also all current maintenance services backlogs and deferred maintenance activities would be eliminated, and

inspection and maintenance needs met, and Street Tree trim cycle accelerated to a three (3) year trimming cycle.

FINDING: safe and sustainable with no deferred street maintenance services, and the best possible street pavement condition with street pavement preventative maintenance costs essentially eliminated for the following five year period.

TABLE I-5 - BUDGET ALLOCATION SCENARIO 5 (1,000s)

BUDGET ALLOCATION SCENARIO 5	<u>FY13/14</u>	<u>FY14/15</u>	<u>FY15/16</u>	<u>FY16/17</u>	<u>FY17/18</u>	<u>TOTAL</u>
1. Pavement Mgmt Program (PMP)						
a. <i>Base cost/Current CIP Budget Allocation</i> *	982	975	980	850	850	4,637
b. Additional PMP CIP Budget Allocation	5,268	5,275	5,270	5,400	5,400	26,613
c. Subtotal PMP CIP Fund 308	\$6,250	\$6,250	\$6,250	\$6,250	\$6,250	\$31,250
2. <i>Base Maintenance Services Division</i>						
Current General Fund Budget Allocation*	1,719	1,779	1,839	1,901	1,973	9,211
3. Downtown Park Lot Slurry & striping	17					17
4. Concrete/brick Paver Repairs	12					12
5. Sidewalk Repairs	72	72	72	72	72	360
6. Curb & Gutter Repairs	96	96	96	96	96	480
7. Repaint Colored Curbs	32	32	32	32	32	160
8. Replace Aging Wood Streetlight Poles	5	5	5	5	5	25
9. Renovate Medians	25	25	25	25	25	125
10. Repair & Renovate Brick Planters	27					27
11. Certify as Tree City USA	1					1
12. Prepare Street tree Inventory	10					10
13. Remove/Replace Street Trees	38	38	38	38	38	190
14. Resume Regular Street Tree Trimming Three (3) Year Cycle	120	120	120	120	120	600
15. Storm Drain Pipeline & Culverts Inspections & Repairs	5	25	5	5	5	45
16. Emergency Storm Pump Station Repairs & Pump Replacement	20					20
17. Storm Drain Pump Station Rehabilitation Amortization	50	50	50	50	50	250
18. Subtotal Additional Items (3. Thru 17.)	530	463	443	443	443	2,322
TOTAL BUDGET ALLOCATION SCENARIO 5	\$8,499	\$8,492	\$8,532	\$8,594	\$8,666	\$42,783
Finding: SAFE AND SUSTAINABLE						
Amount over Base Budget Allocations	+ 5,798	+ 5,738	+ 5,713	+ 5,843	+ 5,843	+ 28,935
Note *Actual current budget allocation from 5 year plan FY13/14 to FY17/18						
**This PMP CIP Fund 308 Budget Scenario would yield an estimated PCI 85						

