CITY OF ALBANY

2019 PMP Update
P-TAP Round 20
Final Report
February 2020

Pavement Engineering Inc.

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Section I

Executive Summary

EXECUTIVE SUMMARY

The City of Albany currently maintains approximately 29.64 centerline miles of roads representing 5,050,980 square feet of pavement with a replacement value of approximately $42,689,000 as calculated by StreetSaver®.

Pavement Engineering Inc. (PEI) updated all the streets in the City's Pavement Management System, using the Metropolitan Transportation Commission's (MTC) StreetSaver® program. The purpose of a Pavement Management System is to track inventory, store work history and furnish budget estimates to optimize funding for improving the city's pavement system.

INTRODUCTION

A Pavement Management System has several distinctive uses:

- As a budgeting tool, a Pavement Management System uses treatment costs that are based on recently bid projects, by the participating agency, so that budgets reflect historical costs for the area.
- As an inventory tool, a Pavement Management System provides a quick and easy reference for pavement areas and use.
- As a pavement condition record, a Pavement Management System provides age, load-related, non-load related and climate-related pavement condition and deterioration information. The Pavement Management System uses pavement deterioration curves, based on nationwide research, which allow the program to predict a pavement's future condition.

A Pavement Management System is not capable of providing detailed engineering designs for a street. The Pavement Management System instead helps the user identify candidate streets for potential repair and maintenance. Project level pavement analysis and engineering is an essential feature of future pavement maintenance and rehabilitation projects. Additional investigation, or project level analysis, can optimize the City's pavement management dollars. Project level engineering examines the pavements in significantly more detail than the visual evaluation required for the Pavement Management System Update and optimizes designs for all of the peculiar constraints of a set of project streets.

WORK PERFORMED

Pavement Distress Survey and Database Update

For this update, PEI performed inspections on approximately 29.64 centerline miles of road. Field inspections were completed in June 2019.

PEI measured the following distress types as part of our review: alligator cracking (fatigue), block cracking, distortions, longitudinal & transverse cracking, patching & utility cut patching, rutting / depressions, weathering, and raveling. All the collected data was entered into the City's StreetSaver® database.

As part of our field review, all the streets were measured to confirm lengths and widths. Lengths were measured using a vehicle-mounted electronic measuring device and widths were measured using a hand-held measuring wheel. Measurement discrepancies were tabulated and reviewed with the City to determine if corrections were needed.

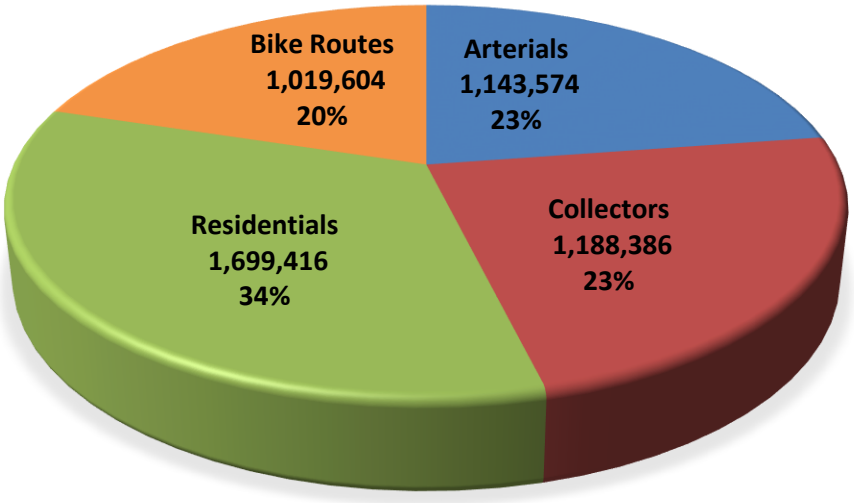
PEI performed a quality control (QC) check on our work. PEI's QC check consists of performing a field review of any street segment where the PCI showed a decrease of 3 or more points per year, or an increase of 1 PCI without a documented M&R treatment, when compared to the last inspection for the same road segment in the StreetSaver® database. Each segment in the QC process was visually reviewed to determine if the StreetSaver® calculated PCI was representative of the observed overall pavement condition for that road segment. Variations found were re-inspected by a Senior Engineering Technician, or the Project Manager, and the segments' PCI was recalculated.

FINDINGS

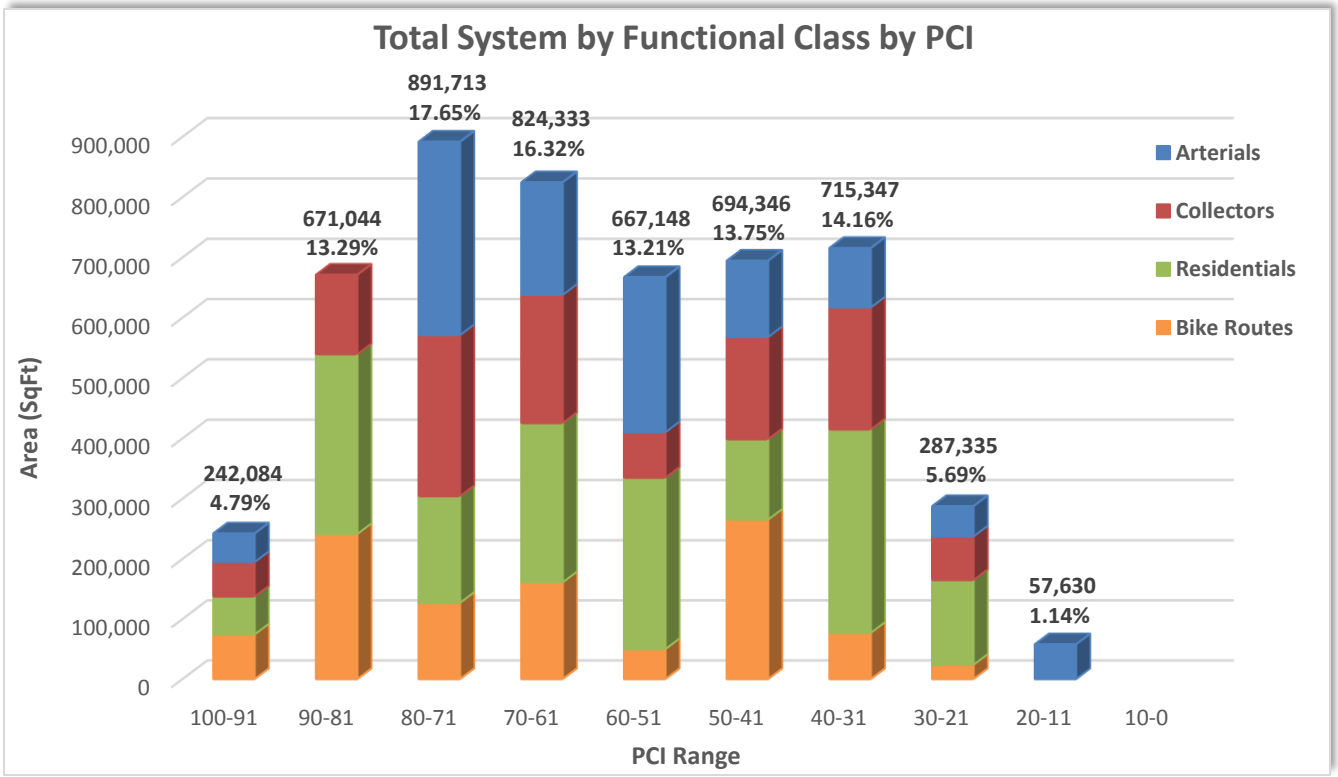
The updated Pavement Management System showed that the City's overall average PCI is **60**.
The breakdown by functional classification is as follows:

Functional Classification	Centerline Miles	Lane Miles	Area (sq. ft.)	Percent of System	Average PCI
Arterial	**5.25**	**10.84**	**1,143,574**	**22.64%**	**57**
Collector	**6.25**	**12.50**	**1,188,386**	**23.53%**	**59**
Residential	**11.52**	**22.96**	**1,699,416**	**33.65%**	**59**
Bike Routes Upgraded from Residential	**6.62**	**13.12**	**1,019,604**	**20.19%**	**65**
Totals	**29.64**	**59.42**	**5,050,980**	**100%**	**60**

The pie graph below shows the percentage of each functional classification, by area.



The bar graph below shows the City's street system broken down into 10-point PCI ranges.



The breakdown by Condition Category and corresponding PCI range is shown below:

Condition Category Breakdown			
Condition	**PCI Range**	**% Of Total**	**Square Feet**
Excellent	100-91	4.79%	242,084
Good	90-71	30.94%	1,562,757
Fair	70-51	29.53%	1,491,481
Poor	50-31	27.91%	1,409,693
Failed	30-0	6.83%	344,965

The analysis shows that **60.47%** of the City's pavement are in **Good** to **Fair** condition. Details of each street segment are provided in ***Section IV: Reference Reports***.

BUDGET ANALYSIS

StreetSaver® uses a decision tree to model the decision-making process that agencies follow to select a maintenance or rehabilitation strategy. The decision tree contains "branches" for each functional classification, surface type and condition category. Jurisdictions can outline their maintenance and rehabilitation strategy by choosing a treatment for each branch.

The treatments listed in the decision tree are generalized to provide a range of treatments. Typical treatments within each generalized treatment range are listed below. The exact treatment would need to be determined during the design phase of the project.

StreetSaver® assigns a treatment action and estimated cost to each street segment based on the pavement's current PCI.

Treatment Category	Typical Treatment
Light Maintenance	• Slurry Seal or Micro-Surface • Fog Seal or Scrub Seal
Heavy Maintenance	• Chip Seal, Cape Seal • Slurry Seal or Micro-Surface with Digouts • Thin Maintenance Overlay (TMO)
Light Rehab.	• Overlay (2" and under) or Thin Mill and Fill
Heavy Rehab.	• Overlay (greater than 2") or Thick Mill and Fill • Cold-In-Place Recycling • Full Depth Reclamation • Pulverize and Resurfacing
Reconstruct	• Full Section Reconstruction

Decision Tree Unit Prices

As a minimum, recent bid tabulations should be used to determine the appropriate unit costs. Further, the unit costs include other costs such as design, construction management, contingencies or other related construction costs (ADA ramps, curb & gutters, striping etc.) to form a more comprehensive unit cost for the selected treatments.

For the City of Albany, the unit costs on the following table were used:

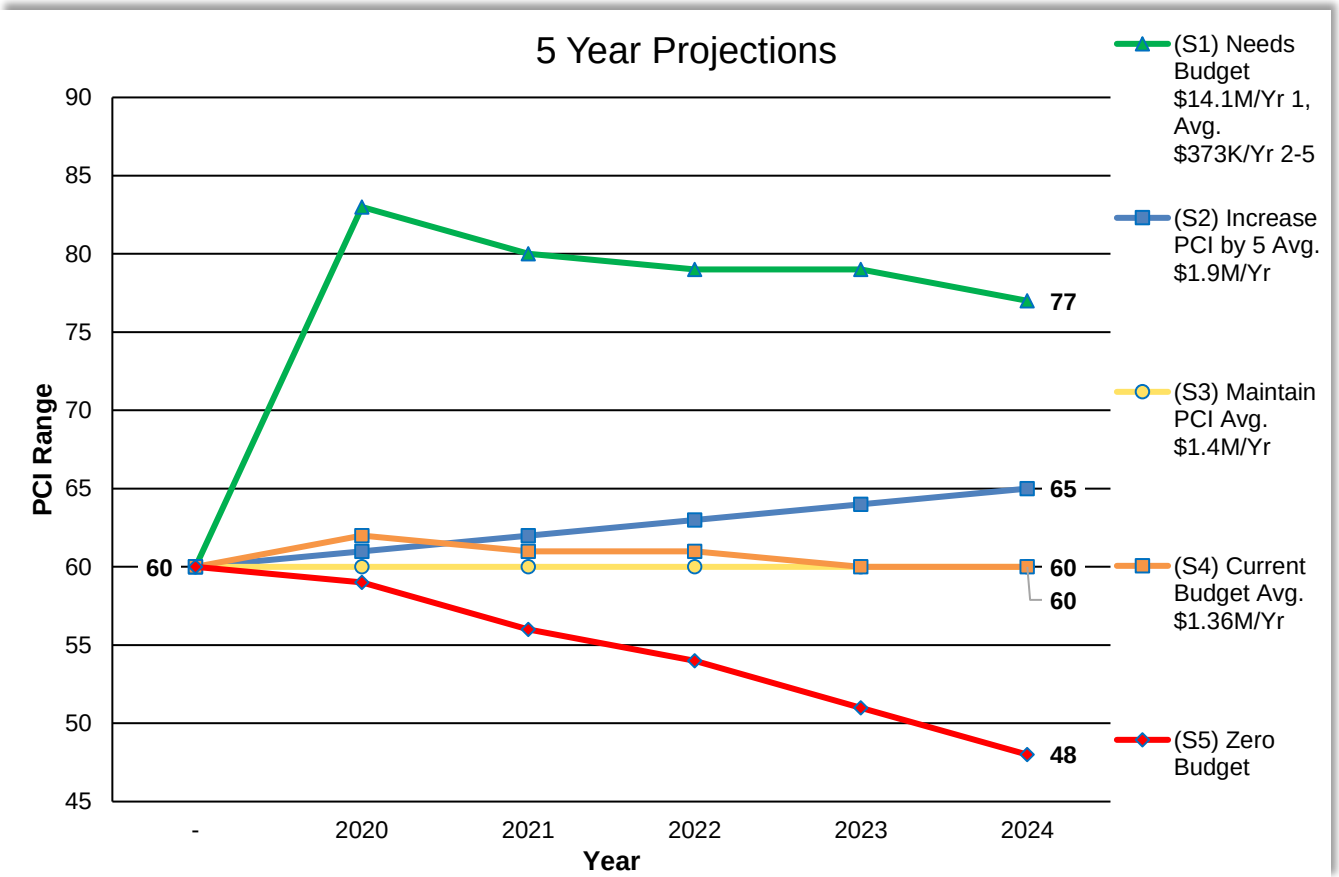
Decision Tree Unit Prices

Arterials		Collectors		Residential	
Cat. I		**Cat. I**		**Cat. I**	
Crack Seal	$1.00/LF	Crack Seal	$1.00/LF	Crack Seal	$1.00/LF
Slurry Seal		Slurry Seal		Slurry Seal	
$2.60		$2.60		$2.60	
Cat. II (Non-Load)	**Cat. III (Load)**	**Cat. II (Non-Load)**	**Cat. III (Load)**	**Cat. II (Non-Load)**	**Cat. III (Load)**
Mill & Thin HMA Overlay (2") $35.00	Mill & Thin HMA Overlay (2") $46.00	Cape Seal $21.00	Mill & Thin HMA Overlay (2") $43.00	Cape Seal $20.00	Cape Seal $26.00
Cat. IV		**Cat. IV**		**Cat. IV**	
Mill & Thick HMA Overlay (4") $72.00		Mill & Thick HMA Overlay (3") $58.00		Cape Seal $29.00	
Cat. V		**Cat. V**		**Cat. V**	
Reconstruct Surface (HMA, 8") $108.00		Reconstruct Surface (HMA, 6") $83.00		Reconstruct (3" HMA AND 9" FDR) $61.00	

For this update, PEI analyzed several scenarios, which are summarized below:

Budget Scenario Projections

PEI generated Five (5) scenario projections which are represented graphically below:



A summary of each of the scenario projections are as follows:

Scenario 1: Unconstrained Budget/ Funds Needed to obtain Optimum PCI ($14.1M for Year 1, $373K/Yr Avg. for Years 2-5.)

Scenario 2: Amount of funding to increase PCI by 5 (Avg. $1.9M/Yr.)

Scenario 3: Amount of funding to maintain PCI of 60 (Avg. $1.4M/Yr.)

Scenario 4: Impact of the current funding amount ($1.36M/Yr.) the current PCI would increase maintain at a 60.

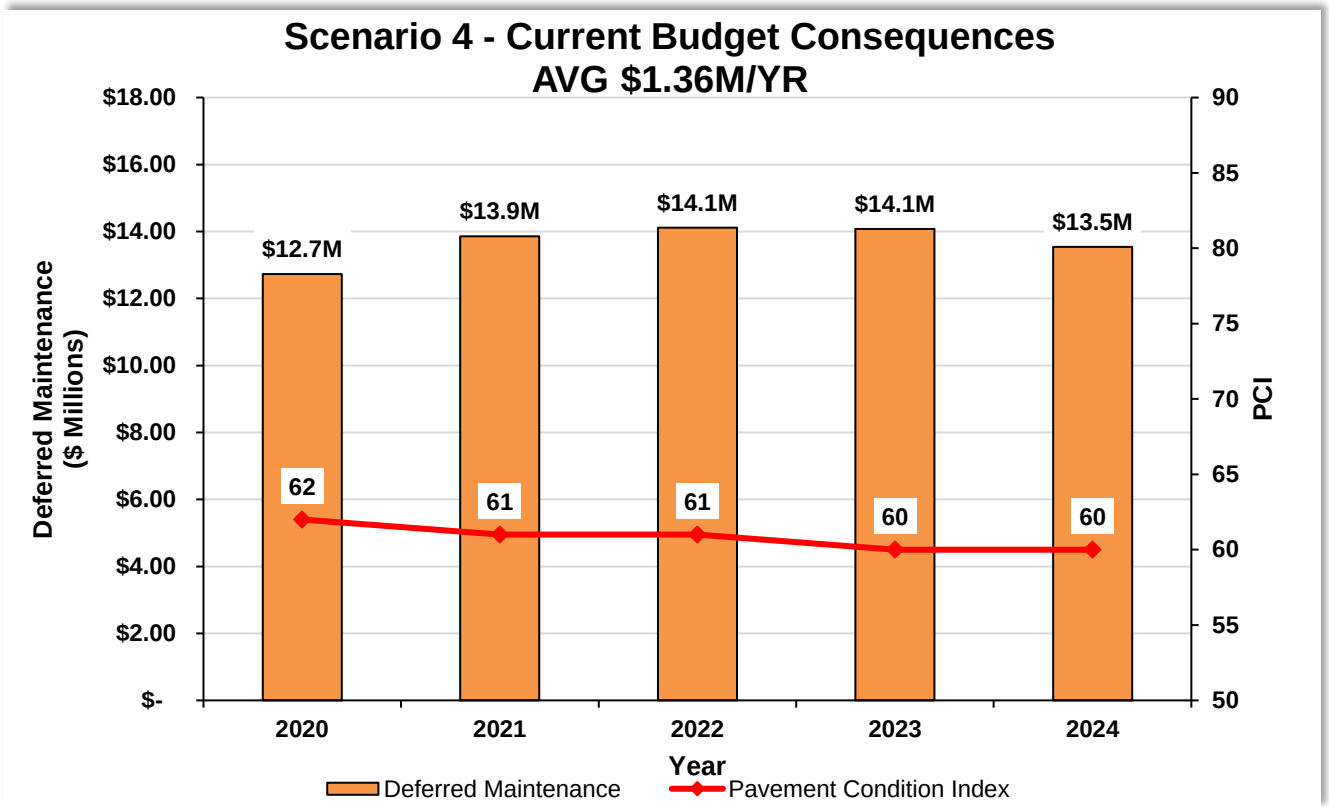
Scenario 5: Represents the impact to the PCI if Zero dollars are spent.

The full report for the various budget scenarios can be found in **Appendix B**.

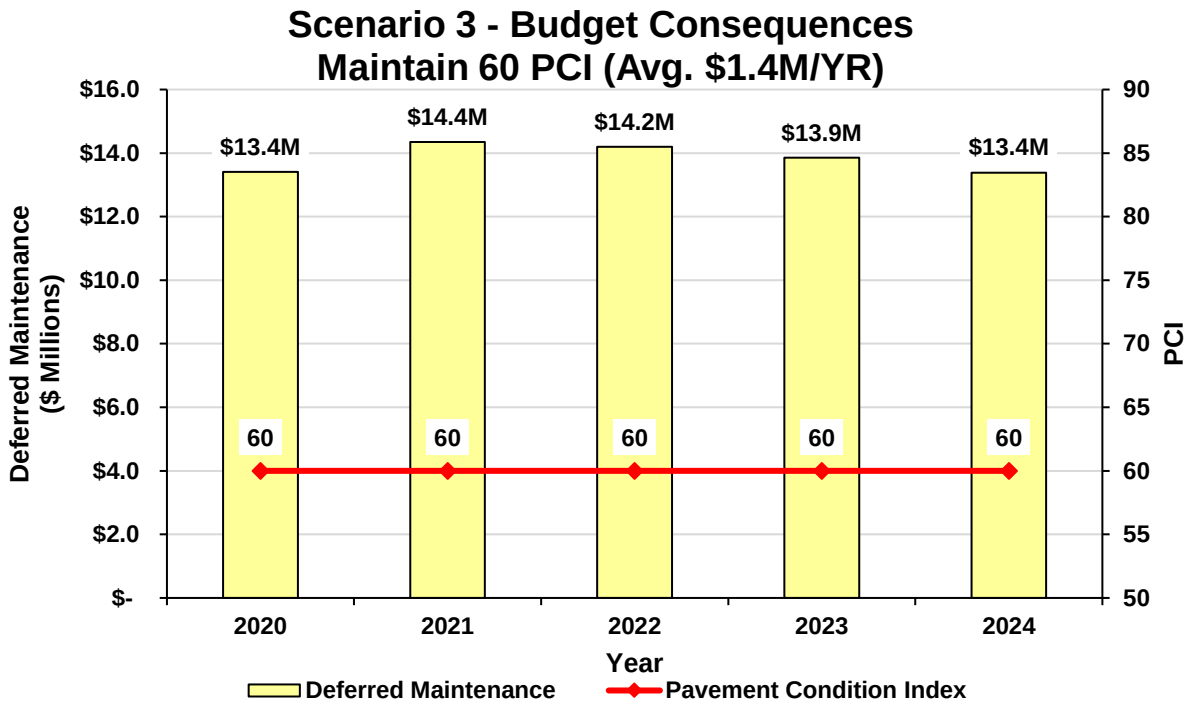
Budget Consequences

The following graphs illustrate the consequences to the City's overall weighted PCI and Deferred Maintenance Amount, based on the scenario projections:

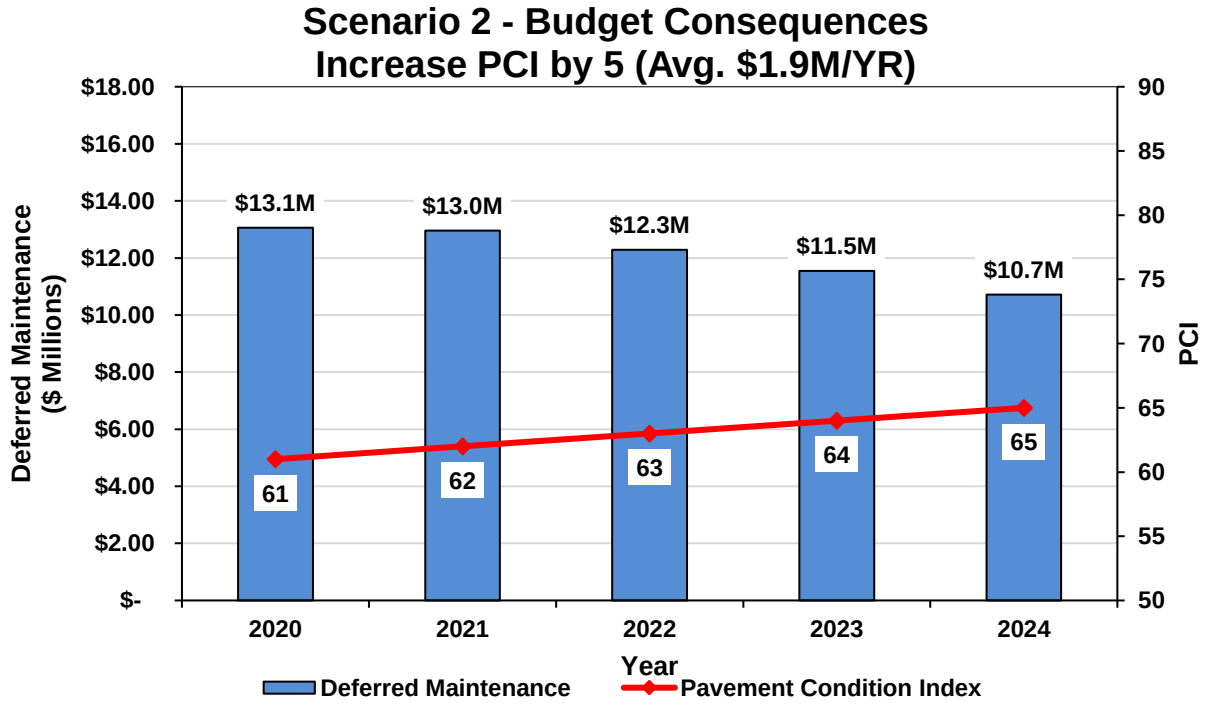
At the current funding level of $1.36M/Yr., the PCI of the entire system will maintain at a 60 over the next 5 years. In addition, the backlog of deferred maintenance grows from $12.7 million to $13.5 million, an increase of 6%.



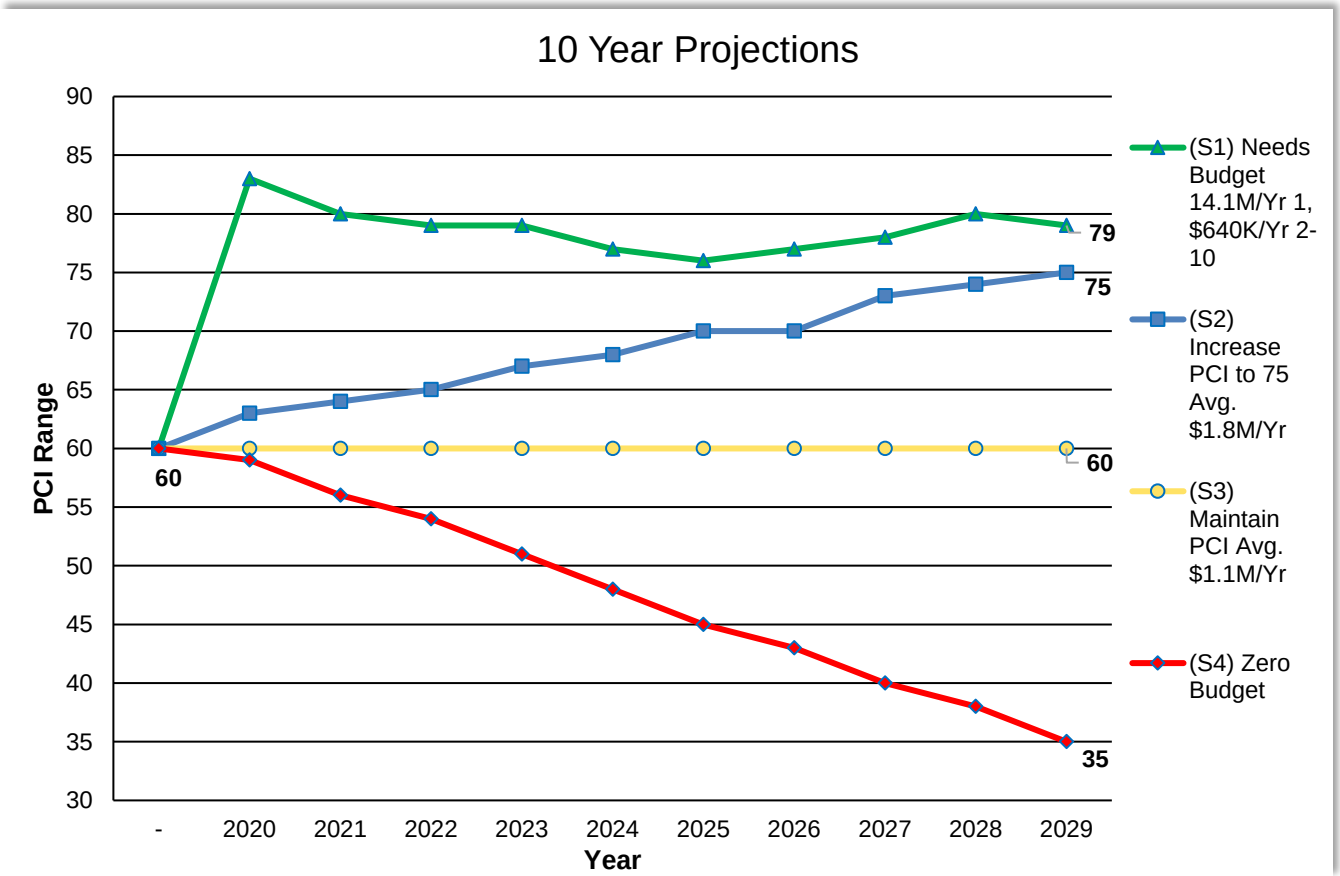
To maintain the current PCI of 60, it is projected that an average funding level of $1.4M/YR is necessary. At this funding level the backlog of deferred maintenance maintains at $13.4 million.



To increase the PCI 5 points from 60 to 65, it is projected that an average funding level of $1.9M/YR is necessary. At this funding level the backlog of deferred maintenance shrinks from $13.1 million to $10.7 million, a decrease of 18%.



PEI performed Ten-year projections, represented by the graphs below.



A brief summary of the 10-year scenarios are as follows:

Scenario 1: Unconstrained Budget/ Funds Needed to obtain Optimum PCI ($14.1M/Yr 1, $640K/Yr 2-10)

Scenario 2: Amount of funding to increase PCI to 75 (Avg. $1.8M/Yr.)

Scenario 3: Amount of funding to maintain PCI of 60 (Avg. $1.1M/Yr.)

Scenario 4: Represents the impact to the PCI if Zero dollars are spent.

CONCLUSIONS AND RECOMMENDATIONS

This Executive Summary provides a review of the 2019 Pavement Management System Update performed by PEI. PEI inspected all road segments in the City of Albany. The average overall PCI for the City is 60. 60.47% of the City's pavement is in Good to Fair condition.

To maintain the system at its current overall PCI of 60, the City will need to spend an average of $1.4 million annually over the next 5 years. Maintaining the current funding level of approximately $1.36 Million annually will result in a maintained PCI of 60.

A review of the City's street system, by functional classification, shows that the Arterial streets have an average PCI of 57, the Collector streets have an average PCI of 59, the Residential streets have an average PCI of 59, and the Bike Route streets have an average PCI of 65. As a general rule, agencies typically try to keep their arterials in the best condition because they carry the bulk of the traffic and loading, followed by collectors, then the residential/ local streets.

Moving forward, PEI recommends the City carefully evaluate the overall annual budget to determine the amount it wants to commit to pavement maintenance and rehabilitation projects. We recommend the City set priorities for each functional classification and perhaps certain streets within each classification.

This Pavement Management System will assist the City in its efforts to monitor treatments and track their effectiveness and help the City in setting future priorities and treatment policies. To ensure the city is evaluating accurate data, PEI suggests the City update its Pavement Management System on a regular basis and review the entire system every three years, this includes a thorough review of the Decision Tree and the unit costs contained within. As the City maintains and updates its Pavement Management System, the program will become a valuable tool in its efforts to maximize performance and minimize the spending for pavements.

Section II

Background

BACKGROUND

This section is intended to introduce important pavement design definitions and calculations as a background for understanding the Pavement Management System (PMS) assumptions.

PAVEMENT DESIGN BASICS

Pavements are a structural support system generally considered to act like a beam. But unlike beams in buildings, which generally have static loads, the pavement structure is flexed many times from traffic loading. Cars and light trucks have little impact on the pavement structure. Larger/Heavier trucks have very significant impacts on the pavement due to the high axle weights. The impact of trucks is measured in equivalent single 18,000-pound axle loads (EALs). The total EALs are converted into a design Traffic Index (TI). As an example, a design TI of 5 is equal to 7,160 EALs. A Design TI of 8 is equal to 372,000 EALs. Therefore, the design TI is the total number of EALs that the pavement will support before it begins to fail, regardless of the passage of time. Normally for a new pavement, the EALs over a 20-year period are used. For rehabilitation procedures such as overlays, 10 years is generally used.

The other element of pavement design is the support of the beam. The support is provided by the sub-grade soils. The support value is designated by the R-value test.

Using the design TI and R-value, the pavement designer chooses various materials to construct the structural section. The most common pavement section is a thin layer of asphalt concrete over aggregate base(s). Many options are available depending on specific project requirements and conditions.

The design methods used in California is based on a 50 percent reliability. This means that the average pavement life of all pavements constructed using the design procedure will last the design life. It also means that about half will not last that long and the other half will last longer. To express this concept, a design life is often expressed in a span of years, such as 17 to 23 years for 20-year design life.

PAVEMENT DETERIORATION

Pavement deteriorates from two processes. There are **fatigue** and **aging.** The processes occur simultaneously. In a well-designed and constructed pavement, the two processes result in the need to rehabilitate the pavement at approximately the same time. This is called the design life. The design life for most new pavements is 20 years. Each aging process has its own set of pavement defects, which are related to the process.

Fatigue

The first deterioration process is fatigue from heavy axle loads. As the pavement structure flexes or bends from heavy wheel loads, the asphalt concrete layer's ability to flex is consumed. With enough bending, the asphalt concrete layer begins to break at the bottom. These cracks progress upward until they reach the surface and appear as alligator cracking. These areas are repaired by removal and replacement of the asphalt concrete in the affected areas. These repairs are commonly called digouts.

As the pavement structure, its supporting soils, and the precise loading from wheel loads vary, so does the time it takes for alligator cracking to appear. As alligator cracking appears, the pavement is repaired with digouts. Generally, when total cumulative quantity of digouts reaches approximately 10 percent, or more, of the total area, the pavement is considered to have reached its service life and requires major rehabilitation.

Aging

The major element of the pavement structure that ages is the asphalt concrete layer. To a minor extent, aggregate bases can age if contaminated by fine soil particles, which are transported from the subsoil into the aggregate base.

Asphalt concrete is composed of aggregates and asphalt cement. The aggregates used are generally of fair quality and do experience some breakdown over time. Aggregate aging problems need to be addressed in maintenance procedures. The asphalt concrete binder ages as well. As the asphalt binder ages, it loses volume through the loss of volatile components in the asphalt. As the volume decreases, the pavement will progressively crack from the resulting tensile strain in the layer. Normally, these cracks first show up as transverse cracks. They also show up in weak areas, such as paving joints. These cracks widen and increase over time until the pavement has a checkerboard appearance.

The aging process also causes the pavement to become more brittle. The increased stiffness results in additional cracking from loaded vehicles. This load induced cracking from the brittleness of the asphalt concrete is very similar to fatigue cracking in appearance.

The major agent for deterioration of the asphalt concrete binder is oxygen. The carrier of the oxygen is water. Water enters the pavement either from the surface or as water vapor from underneath.

TYPICAL PAVEMENT DEFECTS

StreetSaver® identifies eight different Asphalt Concrete distress types. These are:

1. Alligator Cracking (Fatigue)
2. Block Cracking
3. Distortions
4. Longitudinal and Transverse Cracking
5. Patching and Utility Cut Patching
6. Rutting and Depression
7. Raveling
8. Weathering

These defects are common to virtually the entire pavement as aging progresses.

Age cracking begins with longitudinal and transverse cracking and progresses to block shrinkage cracking.

For purposes of understanding the levels of these distresses, the condition level descriptions from the rating manual are included herein:

Alligator Cracking (Fatigue)

Description:

Alligator or fatigue cracking is a series of interconnecting cracks caused by fatigue failure of the asphalt concrete surface under repeated traffic loading. Cracking begins at the bottom of the asphalt surface (or stabilized base) where tensile stress and strain are highest under wheel load. The cracks propagate to the surface initially as a series of parallel longitudinal cracks. After repeated traffic loading, the cracks connect, forming many sided, sharp-angled pieces that develop a pattern resembling chicken wire or the skin of an alligator. The pieces are generally less than 0.6 m (2 ft) on the longest side. Alligator cracking occurs only in areas subjected to repeated traffic loading, such as wheel paths. Therefore, it would not occur over an entire area unless the entire area were subject to traffic loading (pattern-type cracking that occurs over an entire area not subjected to loading is called “block cracking,” which is not a load-associated distress).

Severity Levels:

L Fine, longitudinal hairline cracks running parallel to each other with no, or only a few interconnecting cracks. The cracks are not spalled.

M Further development of light alligator cracks into a pattern or network of cracks that may be lightly spalled.

H Network or pattern cracking has progressed so that the pieces are well defined and spalled at the edges. Some of the pieces may rock under traffic.

Block Cracking

Description:

Block cracks are interconnected cracks that divide the pavement into approximately rectangular pieces. The blocks may range in size from approximately 0.3 by 0.3 m (1 by 1 ft) to 3 by 3 m (10 by 10 ft). Block cracking is caused mainly by shrinkage of the asphalt concrete and daily temperature cycling (which results in daily stress/strain cycling). It is not load-associated. Block cracking usually indicates that the asphalt has hardened significantly. Block cracking normally occurs over a large portion of the pavement area, but sometimes will occur only in non-traffic areas. This type of distress differs from alligator cracking in that alligator cracks form smaller, many-sided pieces with sharp angles. Also, unlike block cracks, alligator cracks are caused by repeated traffic loadings and therefore found only in traffic areas (i.e., wheel paths).

Severity Levels: (*See definitions of longitudinal transverse cracking.)

L Blocks are defined by low-severity* cracks.

M Blocks are defined by medium-severity* cracks.

H Blocks are defined by high-severity* cracks.

Distortions

Description:

Distortions are usually caused by corrugations, bumps, sags and shoving. They are localized abrupt upward or downward displacements in the pavement surface, a series of closely spaced ridges and valley or localized longitudinal displacements of the pavement surface. Distortions affect ride quality.

Severity Levels:

L Distortion produces vehicle vibrations, which are noticeable, but no reduction in speed is necessary for comfort or safety and/or individual distortions cause the vehicle to bounce slightly but create little discomfort.

M Distortion produces vehicle vibrations, which are significant, and some reduction in speed is necessary for safety and comfort.

H Distortion produces vehicle vibrations, which are so excessive that speed must be reduced considerably for safety and comfort.

Longitudinal and Transverse Cracking (Non-PCC Slab Joint Reflective)

Description:

Longitudinal cracks are parallel to the pavement's centerline or laydown direction. They may be caused by:

1. A poorly constructed paving lane joint.
2. Shrinkage of the AC surface due to low temperature or hardening of the asphalt and/or daily temperature cycling.
3. A reflective crack caused by cracking beneath the surface course, including crack in PCC slabs.
4. Decreased support or thickness near the edge of the pavement.

Transverse cracks extend across the pavement at approximately right angles to the pavement centerline or direction of laydown. These may be caused by conditions (2) and (3) above. These types of cracks are not usually load-associated.

Severity Levels:

L One of the following conditions exists:
- (1) non-filling crack width is less than 10 mm (3/8 in.) or
- (2) filled crack of any width (filler in satisfactory condition).

M One of the following conditions exists:
- (1) non-filled crack width is greater than or equal to 10 mm and less than 75 mm (3/8 to 3 in.)
- (2) non-filled crack is less than or equal to 75 mm (3 in.) surrounded by light and random cracking, or
- (3) filled crack is of any width surrounded by light random cracking.

H One of the following conditions exists:

(1) any crack filled or non-filled surrounded by medium or high severity random cracking,

(2) non-filled crack greater than 75 mm (3 in.) or

(3) A crack of any width where approximately 100 mm (4 in.) of pavement around the crack is severely broken.

Patching and Utility Cut Patching

Description:

A patch is an area of pavement that has been replaced with new material to repair the existing pavement. A patch is considered a defect no matter how well it is performed (a patched area or adjacent area usually does not perform as well as an original pavement section). Generally, some roughness is associated with this distress.

Severity Levels:

L Patch is in good condition and satisfactory. Ride quality* is rated as low severity or better.

M Patch is moderately deteriorated and/or ride quality* is rated as medium severity.

H Patch is badly deteriorated and/or ride quality* is rated as high severity. Needs replacement soon.

*Ride quality is defined in the severity levels of distortions.

Rutting and Depressions

Description:

A rut is a surface depression in the wheel paths. Pavement uplift may occur along the sides of the rut, but in many instances, ruts are noticeable only after a rainfall when the paths are filled with water. Rutting stems from a permanent deformation in any of the pavement layers or sub-grades, usually caused by consolidated or lateral movement of the materials due to traffic load. Significant rutting can lead to major structural failure of the pavement.

Depressions are localized areas where the pavement structure is lower than the surrounding area, but the transition is not abrupt enough to be considered a distortion. They are often referred to as “bird baths”.

Severity Levels: (Average Rut or Depression Depth)

L 1/2" to less than 1” (13 to 25mm).

M 1” to less than 2” (25 to 50mm).

H equal to or greater than 2” (over 50mm).

Raveling

Description:

Raveling is the dislodging of coarse aggregate particles. Raveling may be caused by insufficient asphalt binder, poor mixture quality, insufficient compaction, segregation, or stripping.

Coarse aggregate refers to the predominant coarse aggregate size of the asphalt mix, and aggregate clusters refers to when more than one adjoining coarse aggregate piece is missing. If in doubt about a severity level, three representative areas of one square yard each (square meter) should be examined and the number of missing aggregate particles/clusters is counted.

Severity Levels:

M Considerable loss of coarse aggregate greater than 20 per square yard (square meter), and/ or clusters of missing coarse aggregate are present.

H Surface is rough and pitted, and it may be completely removed in places.

Weathering

Description:

Weathering is the wearing away of the asphalt binder and fine aggregate matrix.

Coarse aggregate refers to predominant coarse aggregate size of the asphalt mix. Loss or dislodging of coarse aggregate is covered under Raveling. Surface wear is normally caused by oxidation, inadequate compaction, insufficient asphalt content, excessive natural sand, surface water erosion, and traffic. Weathering occurs faster in areas with high solar radiation.

Severity Levels:

L Asphalt surface beginning to show signs of aging which may be accelerated by climatic conditions loss of fine aggregate mix is noticeable and may be accompanied by fading of the asphalt color. Edges of the aggregates are beginning to be exposed (less than 0.05 inches or 1 mm).

M Loss of the fine aggregate matrix is noticeable and the edges of the coarse aggregate have been exposed up to 1/4th of the width (of the longest side) of the coarse aggregate due to the loss of fine aggregate matrix.

H Edges of the coarse aggregate have been exposed greater than 1/4th of the width (of the longest side) of the coarse aggregate. There is considerable loss of fine aggregate matrix leading to potential or some loss of coarse aggregate.

PAVEMENT MAINTENANCE PROCEDURES

Pavement maintenance procedures are designed to slow the pavement aging process. Mainly, the procedures are designed to protect the pavement from the adverse effects of water and to some extent vehicle traffic.

Maintenance procedures, which protect the pavement from aging, are crack sealing, digouts, slurry seals, and cape seals. When pavements have extensive cracking and are beyond their design life, interim holding measures including skin patches and thin overlays are used as a stop gap prior to major rehabilitation.

The following outlines some of the more common types of maintenance procedures:

Crack Sealing

Crack sealing prevents surface water from getting beneath the asphalt concrete layer into the aggregate bases. Crack sealing is generally performed using hot rubberized crack sealing material. The procedure includes routing small cracks, cleaning and sealing.

Digouts

Digouts are small areas of deteriorated pavements, which are removed and replaced with new asphalt concrete. Pavement removal is accomplished by cold planning or saw cutting and excavation. New asphalt is installed in at least two lifts. The digout depth is determined depending on the street type and construction.

Slurry Seals

Slurry seals consist of a combination of fine aggregate and emulsified oil. A new type of slurry seal called Rubberized Asphalt Slurry (RAS) is in the development stage. Currently, the cost of RAS is 2 to 3 times as much as a conventional slurry seal, which makes the product economically unattractive. Slurry seals are used when the existing pavement surface is severely raveled.

Cape Seals

Cape seals consist of a chip seal over coated with a slurry seal. A chip seal is an application of small angular rock (chips) approximately 1/4" to 3/8” in a maximum size embedded into a thick application of asphalt emulsion. Most chip seals incorporate polymer modified binders.

Cape seals are used on residential and collector streets to maintain a pavement, which may need an overlay, but there are not sufficient funds available. Chip seals are placed over low to moderate alligator cracks and block shrinkage cracking. Due to the distress covered by the chip seal, small areas of disbanding or failure may occur and will require patching.

Cape sealed surfaces are fairly coarse compared to new paving. Due to this characteristic, they may not be acceptable to some segments of the public.

Interim Holding Measures (or “Stop Gap” in StreetSaver® Terms)

Interim holding measures or stop gap treatments are used to “hold” the pavement together until funds become available for major rehabilitation. The common holding measures used by City include skin patches and thin overlays.

Skin patches are thin lifts of fine asphalt concrete placed over deteriorated areas.

Thin maintenance overlays are placed to hold the surface together. The asphalt concrete layer is generally 1 to 1-1/2 inches thick. A 3/8 inch aggregate is used with a Terminally Blended Asphalt Rubber Binder.

PAVEMENT REHABILITATION PROCEDURES

Pavement rehabilitation consists of procedures used to restore the existing pavement quality or to add additional structural support to the pavement. Rehabilitation procedures include conventional overlays; pulverization and resurfacing; ARHM (asphalt rubber hot mix) overlays; AC removal and replacement (Mill and Fill); and reconstruction.

The following outlines some of the more common types of rehabilitation procedures:

Conventional Overlays

Conventional overlays generally consist of surface preparation, pavement fabric and varying thicknesses of asphalt concrete. Surface preparation can consist of crack filling, pavement repairs of base failures and leveling courses.

Pavement fabric is often used as a water inhibiting membrane and to retard reflective cracking. Care must be used with fabric to avoid intersections with heavy truck breaking, steep grades (generally over 8 percent), and areas where subsurface water might be trapped.

The overlay thickness is determined by the structural requirement of the deflection analysis and reflective cracking criteria. The reflective cracking criteria requires the thickness of the overlay to be a minimum 1/2 the thickness of the existing bonded layers. Pavement fabric can account for 0.10 ft of asphalt for reflective cracking criteria if the structural requirements from the deflection analysis are met.

Conventional overlays have an expected service life of 7 to 13 years if they are designed to meet structural and reflective cracking criteria and are well constructed.

Pulverization and Resurfacing

Pulverization and resurfacing is an alternative to conventional overlays for streets that are structurally adequate but exhibit sufficient cracking to warrant improvement to the asphalt surface.

Pulverization and resurfacing are an intermediate step between overlays and reconstruction. The existing asphalt concrete is recycled into aggregate base and the recycled base increases the total structural section. The surface is re-graded to conform to flush facilities similar to the way the pavement is keycut for overlays. The re-grading allows for some improvement to the cross section and profile. This method eliminates the stress history and cracking of the old asphalt concrete pavement, thus eliminating negative impacts on the new asphalt concrete surface.

Some instability can be encountered when the pulverization method is used. PEI typically recommends budgeting 5 to 10 percent of the pulverized sub-grade area for stabilization. Stabilization can be performed using 6-inch deep lift asphalt concrete.

Pulverization and resurfacing has a life expectancy of 13 to 18 years. The life expectancy is slightly less than full reconstruction because some residual deficiencies in thickness or quality of the unaffected layers may still exist. Additional testing is necessary to determine if pulverization is a viable alternative. This testing includes measuring the existing structural section and testing the native soil for bearing capacity (R-value).

RHMA Overlays

RHMA is the shortened reference for Rubberized Hot Mix Asphalt. This new material uses crumb rubber mixed with traditional asphalt binders to produce a more flexible paving material than conventional dense graded hot mix asphalt (HMA).

Caltrans has developed design criteria for use of this material based on accelerated performance testing using its dual wheel accelerated pavement testing equipment. The Caltrans criteria allows RHMA to be used in a one to two ratio to conventional hot mix asphalt. Thus 1 inch of RHMA is equal to two inches of conventional hot mix asphalt. This is true for both structural and reflective cracking criteria.

RHMA costs approximately 1-3/4 times as much as conventional asphalt and provides a similar service life to that of conventional hot mix asphalt, 7 to 13 years. RHMA is generally only feasible when vertical constraints such as curb and gutter restrict the thickness of the overlay. RHMA typically has more open surface than conventional hot mix asphalt and is more difficult to obtain a high quality finished product.

AC Removal and Replacement (Mill and Fill)

On some thick asphalt concrete pavements, the most economical approach to rehabilitating the pavement is to remove some of the existing asphalt concrete surface, which matches the existing profile. The replacement material can be either conventional hot mix asphalt (HMA) or RHMA, depending on the design criteria.

In other cases, due to drainage or other physical constraints, additional thickness cannot be placed. If the underlying base is sufficient to support anticipated loading, the asphalt layer can be removed and replaced. Depending on existing conditions, this method should have a life of 15 to 20 years.

Reconstruction

When the pavement has severe cross section deficiencies or requires significant structural strengthening, reconstruction may be the only alternative. Generally, existing pavement materials are recycled and incorporated into the new pavement structure. Structural section material alternatives include treated soils, full depth asphalt concrete, recycled materials and Portland cement concrete.

Section III

Pavement Management System Specifics

PAVEMENT MANAGEMENT SYSTEM SPECIFICS

This section discusses the characteristics of the Pavement Management System and its application for The City of Albany.

BACKGROUND (STREETSAVER®)

During the early years of Pavement Management software development, many companies developed private software packages focused on management of municipal street systems. Though these programs were versatile and sophisticated, the user was also dependent upon the software vendor for training, program updates, and software servicing. Many of the vendors had difficulty maintaining their software, leaving agencies stranded after making a substantial investment.

In 1982, the Metropolitan Transportation Commission (MTC) completed a study of local road and street maintenance needs and revenue short falls in the San Francisco Bay Area. The results of the study indicated that local jurisdictions were spending only 60 percent of funds required to maintain roads in a condition considered adequate. This indicated a need to improve pavement maintenance and rehabilitation techniques and practices. A committee was formed to evaluate pavement management efforts. At approximately the same time, six public works directors reviewed a proposal to develop a prototype Pavement Management System (PMS); however, it was felt that the proposed system was too complex. This group strongly emphasized that simplicity was the most important objective to be developed in a PMS if it was to be adopted and used by cities and counties.

In 1983, a consultant was retained to assist MTC in determining PMS needs, PMS resources, and problems. In addition, they were to develop three basic elements of a standardized prototype PMS: a pavement condition index (PCI), effective maintenance treatments for the Bay Area, and a network level assignment procedure. The result was the first version of the MTC PMS. Since that time the program has evolved into StreetSaver®.

Today, the Metropolitan Transportation Commission (MTC) for California's San Francisco Bay Area uses StreetSaver® to help local cities and counties better allocate resources, predict the future condition of their pavements at different levels of funding, and demonstrate the effects of underfunded road programs. The Bay Area was one of the first regions in the country to implement a pavement management system that is used by nearly all of its localities. Using StreetSaver®, cities and counties can plan and manage road improvement projects, document budget needs and shortfalls, and use the collected data to build support for additional transportation funding.

StreetSaver® manages a collection of related data organized for easy storage and retrieval. The StreetSaver® program includes a database comprised of several sets of related data ("tables") that contain information about the street network in the jurisdiction. This information includes pavement condition, the available maintenance/rehabilitation treatments and their costs, and the history of the network. Based on this information, budget analyses are performed. A budget analysis allows the user to project network maintenance and rehabilitation needs, and costs to evaluate the consequences of various budget allocation alternatives. Alternatives can be evaluated in terms of maintenance and rehabilitation that can actually be performed, future pavement condition, and deferred costs. For some agencies, use of the StreetSaver® program is cyclical. For others, pavement management is integrated into an ongoing effort to manage their street networks.

Implementation

There are several steps involved in implementing an effective Pavement Management System. These tasks should be completed on a periodic basis. These tasks include:

1. Collect pavement condition and maintenance/rehabilitation data.
2. Enter re-inspection data and/or applied maintenance and rehabilitation information.
3. Check/update maintenance treatment definitions and pavement category definitions.
4. Calculate Pavement Condition Index (PCI)
5. Evaluate system and current Maintenance/Rehabilitation strategies. Determine Budget needs and if necessary develop alternate Budget Summaries.
6. Present analysis outputs to funding bodies.
7. Acquire funds and apply maintenance/rehabilitation treatments.

SYSTEM ASSUMPTIONS

The goal of the Pavement Management System is to furnish budgetary amounts in order to achieve system wide improvements in the overall pavement condition. The goal of project engineering is to obtain the maximum economical affect for a given subset of the system to be maintained. Using the Pavement Management System, management is able to realistically budget for economically maintaining The City's pavement system. Annually updating maintenance activity and costs keeps the system current.

PAVEMENT MAINTENANCE AND REHABILITATION (M&R) UNIT COSTS

The reliability and accuracy of any PMS is based on the information contained in its Decision Tree. The listed treatments in the Decision Tree are generalized to provide a range of treatments. The exact treatment would need to be determined during the design phase of a project.

Typical treatments within each generalized treatment range are listed below.

Treatment Category	Typical Treatment
Light Maintenance	• Slurry Seal or Micro-Surface • Fog Seal or Scrub Seal
Heavy Maintenance	• Chip Seal, Cape Seal • Slurry Seal or Micro-Surface with Digouts • Thin Maintenance Overlay (TMO)
Light Rehab.	• Overlay (2" and under) or Thin Mill and Fill
Heavy Rehab.	• Overlay (greater than 2") or Thick Mill and Fill • Cold-In-Place Recycling • Full Depth Reclamation • Pulverize and Resurfacing
Reconstruct	• Full Section Reconstruction

Based on a street segment's current PCI condition, StreetSaver® assigns a treatment action and estimated cost to perform the suggested treatment. This cost is not just what is paid to the contractor but should include all the "Soft Costs" incurred by The City.

Soft Costs can include the surface preparation, engineering cost, materials testing, and construction inspection. Even if these tasks are done "in-house", the inclusion in combination with the construction costs will tend to show the "true picture" of the cost of a specific project.

The following costs were used to develop the indicated budget numbers for each street segment PEI reviewed. The costs include miscellaneous work such as transitions, striping, dig outs, etc.

The costs are averages. Small systems will have higher unit costs and large systems will have lower unit costs. The larger the annual project size, the better the economies of scale. Timing is also important. Bidding the work in early spring will result in significantly lower prices than bids solicited in the late summer or fall. If small packages are used, costs could be 25 to 50 percent higher.

The unit costs include a 10% increase to account for potential PCC repairs that may be triggered by applying a maintenance or rehabilitation treatment to a street section. The unit costs also include a 15% allowance to account for engineering design fees and inspection. As well as a 10% contingency. These prices are in today's dollars (2019) and do not account for inflation.

Decision Tree Unit Prices

Arterials		Collectors		Residential	
Cat. I		**Cat. I**		**Cat. I**	
Crack Seal	$1.00/LF	Crack Seal	$1.00/LF	Crack Seal	$1.00/LF
Slurry Seal		Slurry Seal		Slurry Seal	
$2.60		$2.60		$2.60	
Cat. II (Non-Load)	**Cat. III (Load)**	**Cat. II (Non-Load)**	**Cat. III (Load)**	**Cat. II (Non-Load)**	**Cat. III (Load)**
Mill & Thin HMA Overlay (2”) $35.00	Mill & Thin HMA Overlay (2”) $46.00	Cape Seal $21.00	Mill & Thin HMA Overlay (2”) $43.00	Cape Seal $20.00	Cape Seal $26.00
Cat. IV		**Cat. IV**		**Cat. IV**	
Mill & Thick HMA Overlay (4”) $72.00		Mill & Thick HMA Overlay (3”) $58.00		Cape Seal $29.00	
Cat. V		**Cat. V**		**Cat. V**	
Reconstruct Surface (HMA, 8”) $108.00		Reconstruct Surface (HMA, 6”) $83.00		Reconstruct (3” HMA AND 9” FDR) $61.00	

Decision Trees / Treatment Strategies

The Decision Trees are broken down into two main areas; Preventive Maintenance (PM) and Rehabilitation. StreetSaver® makes preventive maintenance a top priority. The longer a segment can be kept in good condition the lower the overall cost of its treatments. Preventive Maintenance addresses the sections that have a PCI of 71 and greater. This area is further broken down to specific treatments that could be better termed as Crack Sealing, Surface Treating and Restoration Treatments.

The Decision Tree allows the user to program these treatments on a cyclical basis. As part of this cyclical process, once a road has reached the point where it can no longer be maintained by a crack seal or a surface seal the program will shift to a Restoration Treatment. The program uses this treatment to restore the pavement in long term budgeting scenarios to the Very Good category.

The Decision Tree for Preventive Maintenance and Rehabilitation was reviewed with The City of Albany and updated by PEI. The decision tree customizes the logic for how and what maintenance and rehabilitation treatments StreetSaver® selects.

Five general pavement treatment categories were used to account for the various treatments in the decision tree: reconstruction, heavy overlays, light overlays, heavy maintenance, light maintenance and no action. Specifying a general treatment category

allows the user to stay focused on a budget level analysis rather than moving to a project level analysis.

The PMS software assumes average construction and material quality. Pavement life is very sensitive to materials and workmanship quality. Poor quality new construction may result in up to a 50 percent loss in the pavement life. In other words, poor quality new construction may last 10 to 15 years, whereas excellent quality construction may last 20 to 30 years. Investing in quality, both in design and construction, provides significant returns in extended pavement life resulting in lowered annual maintenance costs.

The Decision Tree for The City of Albany can be found in **Appendix A** of this report.

ANNUAL PAVEMENT MAINTENANCE / REHABILITATION PROGRAM

The PCI range of 0 to 100 is broken down into five condition categories for budget calculation purposes. StreetSaver® default PCI breakpoints were used during the update of The City of Albany's Pavement Management System.

The default breakpoints are as follows:

PCI BREAKPOINTS

	Arterials	Collectors	Residential
100	I	I	I
90	LIGHT MAINTENANCE	LIGHT MAINTENANCE	LIGHT MAINTENANCE
70	II (Non-Load) HEAVY MAINT. / III (Load) LIGHT REHAB.	II (Non-Load) HEAVY MAINT. / III (Load) LIGHT REHAB.	II (Non-Load) HEAVY MAINT. / III (Load) LIGHT REHAB.
50	IV	IV	IV
	HEAVY REHAB.	HEAVY REHAB.	HEAVY REHAB.
25	V	V	V
0	RECONSTRUCT	RECONSTRUCT	RECONSTRUCT

When a pavement section is identified for maintenance or rehabilitation, a user defined network-level cost category for a pavement of that functional class, type and condition is used to determine the needed funds for that section. For sections falling within the preventive maintenance category, or category one (1), a time sequence is used to identify the appropriate treatment and cost.

For those sections falling into a rehabilitation category, or categories two (2), three (3), four (4), or five (5), the PCI is used to determine the repair category for a pavement section.

The repair category is combined with functional classification (as a surrogate for traffic index) and surface type (as a surrogate for structural adequacy) to identify the appropriate treatment and cost. The treatment and cost identified for the section is a network-level budget planning treatment and is generally considered as a cost category for budgeting purposes rather than an actual treatment. Some sections will require more money than estimated, some will require less. A project-level analysis is used to determine the actual treatment to be used for a given section based on condition, structural capacity and other factors.

The funding needs are summed for all sections needing work for each year of the analysis period to determine the annual budget needs. The needs analysis provides a list of sections needing work over the selected analysis period and an estimate of the funds needed. In StreetSaver®, this analysis period is 5 years. It identifies maintenance and rehabilitation needs without considering funding constraints, i.e. the Needs Analysis is unconstrained by the available budget. StreetSaver® identifies candidate sections and funds needed to provide the level of service to meet agency-defined goals.

When an agency has a considerable backlog of maintenance and repair needs, the first-year needs will include the bulk of sections needing work. From a funding standpoint, this may appear unrealistic; however, the needs analysis is only the first step in planning and programming. The information from the needs analysis is generally best presented to management as the total 5 year needs or the average needs per year of the 5-year period. Few agencies will be able to meet the first year needs as developed by the program.

The StreetSaver® Needs Analysis provides information on the condition of the network over the analysis period with and without application of the treatments. Since the application of treatments assume no limit on funds, this can be considered the upper limit of condition that could be reached by the agency and the condition without treatment can be considered the lower limit.

StreetSaver® uses a ranking process based on cost-effectiveness concepts. Basically, the longer a pavement is in good condition, the more benefit the user gets from the pavement. This can be approximated by the area under the PCI vs Time curve.

The larger that area, the longer the pavement provides the desired level of service. That area is divided by annualized costs per unit area. This ratio is weighted for different usage so that arterial streets are selected for repair before collectors in the same condition, which are selected for repair before residential/locals in the same condition. Sections of

pavements that provide the best service for the least money are then selected as those that should be repaired first. StreetSaver® provides a ranked listing based on this cost-effectiveness analysis. StreetSaver® also shows the condition with and without treatment, the estimated costs for each section, the calculations used to determine the ranking, and a listing of sections not recommended for treatment.

VISUAL EVALUATIONS

PEI's technical staff evaluated all of the pavements. The streets were rated based on the StreetSaver® system described in the Background. Once the data was entered into the program, PEI completed a quality assurance review of the system and verified the results in the field. The street inventory was based on visual evaluations.

SYSTEM UPDATES

The Pavement Management System is a dynamic program. It is expected that The City will continue to visually rate the street network and update the database at least every three years. In addition to the visual review, The City should update the database by adding new streets incorporated into The City as well as new maintenance and rehabilitation work performed to any particular street segment.

Section IV
Reference Reports

Street List Alphabetical

City of Albany

Desktop Reference Alphabetical

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
ADAMS ST. - ADAMS	10	BUCHANAN ST.	SOLANO AVE	48	845	O
ADAMS ST. - ADAMS	20	SOLANO AVE	WASHINGTON AVE	66	718	O
ADAMS ST. - ADAMS	30	WASHINGTON AVE.	CASTRO ST	95	668	O
ADAMS ST. - ADAMS	40	CASTRO ST	CLAY ST	95	668	O
ADAMS ST. - ADAMS	50	CLAY ST	NORTH END	95	575	O
ALBANY TERR - ALBANYT	10	NIELSEN ST.	TEVLIN ST.	79	230	R
BEVERLY PL. - BEVERL	10	VENTURA AVE.	CITY LIMIT (BERKELEY)	38	358	R
BRIGHTON AVE. - BRIGHT	10	SAN PABLO AV	EVELYN AVE.	37	1246	C
BRIGHTON AVE. - BRIGHT	20	EVELYN AVE.	KEY ROUTE BLVD.	43	1120	C
BUCHANAN AVE - BUCHAV	10	CLEVELAND AVE (W)	CLEVELAND AVE (E)	29	160	A
BUCHANAN AVE - BUCHAV	20	CLEVELAND AVE. (E)	E END at PIERCE ST.	71	250	A
BUCHANAN ST EB - BUCHEB	40	PIERCE ST.	JACKSON ST.	66	1260	A
BUCHANAN ST WB - BUCHWB	50	JACKSON ST	PIERCE ST	63	1260	A
BUCHANAN ST WB - BUCHWB	50B	PIERCE ST	MADISON ST	74	1500	A
BUCHANAN ST WB - BUCHWB	60	SAN PABLO AV	JACKSON ST	69	767	A
BUCHANAN ST. - BUCHAN	30	OVERPASS	PIERCE ST.	31	780	A
CALHOUN ST. - CALHOU	10	PIERCE ST.	END	39	178	R
CARMEL AVE. - CARMEL	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	90	981	O
CARMEL AVE. - CARMEL	20	PORTLAND AVE.	WASHINGTON AVE.	71	661	R
CARMEL AVE. - CARMEL	30	WASHINGTON AVE.	SOLANO AVE.	34	762	R
CARMEL AVE. - CARMEL	40	SOLANO AVE.	MARIN AVE.	25	823	R
CASTRO. ST. - CASTRO	10	JACKSON ST.	SAN PABLO AV	55	724	R
CERRITO ST. - CERRIT	10	HILLSIDE AVE.	WASHINGTON AVE.	87	461	R
CERRITO ST. - CERRIT	20	WASHINGTON AVE.	SOLANO AVE.	34	688	R
CERRITO ST. - CERRIT	30	SOLANO AVE.	BUCHANAN ST.	54	700	R
CLAY ST. - CLAYS	10	MADISON ST	SAN PABLO AV	43	500	R
CLEVELAND AVE. - CLEVEL	10	CITY LIMIT (EL CERRITO)	RAMP ON HWY 80	16	1921	A
CLEVELAND AVE. - CLEVEL	20	RAMP ON HWY 80	PVMNT CHG	58	770	A
CLEVELAND AVE. - CLEVEL	30	PVMNT CHG	WASHINGTON AVE	30	254	A
CLEVELAND AVE. - CLEVEL	40	WASHINGTON AVE.	JOHNSON ST.	31	510	A
CLEVELAND AVE. - CLEVEL	50	JOHNSON ST.	BUCHANAN ST.	21	188	A
CLEVELAND AVE. - CLEVEL	60	BUCHANAN AVE	BUCHANAN ST STOP SIGN	24	366	A
CORNELL AVE. - CORNEL	10	PARKING LOT	BRIGHTON AVE	48	446	R
CORNELL AVE. - CORNEL	20	BRIGHTON AVE	GARFIELD AVE	52	582	R
CORNELL AVE. - CORNEL	30	GARFIELD AVE.	PORTLAND AVE.	28	589	R
CORNELL AVE. - CORNEL	40	PORTLAND AVE.	WASHINGTON AVE.	46	589	R
CORNELL AVE. - CORNEL	50	WASHINGTON AVE.	SOLANO AVE.	31	701	R
CORNELL AVE. - CORNEL	60	SOLANO AVE.	MARIN AVE.	30	1140	R
CORNELL AVE. - CORNEL	70	MARIN AVE.	DARTMOUTH ST.	67	1042	R
CORNELL AVE. - CORNEL	80	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	67	494	R
CURTIS ST. - CURTIS	10	CITY LIMIT (KENSINGTON)	PORTLAND AVE.	90	1318	O
CURTIS ST. - CURTIS	20	PORTLAND AVE.	WASHINGTON AVE.	90	661	R
CURTIS ST. - CURTIS	30	WASHINGTON AVE.	SOLANO AVE.	90	684	R
CURTIS ST. - CURTIS	40	SOLANO AVE.	MARIN AVE.	61	631	R
CURTIS ST. - CURTIS	50	MARIN AVE	SONOMA AVE	62	405	O
CURTIS ST. - CURTIS	60	SONOMA AVE	FRANCIS ST	64	1207	R

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
CURTIS ST. - CURTIS	70	FRANCIS ST.	CITY LIMIT (BERKELEY)	66	596	R
DARTMOUTH ST. - DARTMO	10	SAN PABLO AV	TALBOT AVE.	47	1000	O
DARTMOUTH ST. - DARTMO	20	TALBOT AVE.	POMONA AVE.	65	975	O
EASTSHORE HWY. - EASTSH	10	CITY LIMIT (BERKELEY)	1025 EASTSHORE HWY-PAVT CHANGE	60	1325	A
EASTSHORE HWY. - EASTSH	20	1025 EASTSHORE HWY PAVT CHANGE	BUCHANAN ST(BRIDGE)	74	600	A
EVELYN AVE. - EVELYN	10	NORTH END	BRIGHTON AVE	90	462	R
EVELYN AVE. - EVELYN	20	BRIGHTON AVE	PORTLAND AVE.	94	1215	R
EVELYN AVE. - EVELYN	30	PORTLAND AVE.	WASHINGTON AVE.	62	589	R
EVELYN AVE. - EVELYN	40	WASHINGTON AVE.	SOLANO AVE.	60	792	R
EVELYN AVE. - EVELYN	50	SOLANO AVE.	MARIN AVE.	50	1042	R
EVELYN AVE. - EVELYN	60	MARIN AVE.	DARTMOUTH ST.	59	1042	R
EVELYN AVE. - EVELYN	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	90	620	R
FILLMORE ST. - FILLMO	10	SOLANO AVE.	BUCHANAN ST.	53	557	R
FRANCIS ST. - FRANCI	10	SANTA FE AVE.	NIELSEN ST.	80	475	O
FRANCIS ST. - FRANCI	20	NIELSEN ST.	PERALTA AVE.	77	393	O
GARFIELD AVE. - GARFIE	10	SAN PABLO AV	CORNELL AVE.	60	730	R
GARFIELD AVE. - GARFIE	20	CORNELL AVE.	MASONIC AVE.	72	736	R
GATEVIEW AVE. - GATEVI	10	WASHINGTON AVE.	END	35	941	R
HILLSIDE AVE. - HILLSI	10	JACKSON ST	TAFT ST	31	786	R
HILLSIDE AVE. - HILLSI	20	TAFT ST.	SOUTH END	38	1375	R
JACKSON ST. - JACKSO	10	N END	CASTRO. ST.	21	1547	R
JACKSON ST. - JACKSO	20	CASTRO. ST.	WASHINGTON AVE.	35	701	O
JACKSON ST. - JACKSO	30	WASHINGTON AVE.	SOLANO AVE.	42	721	O
JACKSON ST. - JACKSO	40	SOLANO AVE.	BUCHANAN ST.	91	752	C
JACKSON ST. - JACKSO	50	MONROE ST	CITY LIMIT (BERKELEY)	68	350	O
JOHNSON ST. - JOHNSO	10	CLEVELAND AVE.	PIERCE ST.	83	429	R
KAINS AVE. - KAINS	10	PARKING LOT	GARFIELD AVE.	49	963	O
KAINS AVE. - KAINS	20	GARFIELD AVE.	PORTLAND AVE.	62	589	O
KAINS AVE. - KAINS	30	PORTLAND AVE.	WASHINGTON AVE.	76	589	O
KAINS AVE. - KAINS	40	WASHINGTON AVE.	SOLANO AVE.	61	606	O
KAINS AVE. - KAINS	50	SOLANO AVE.	MARIN AVE.	90	1235	O
KAINS AVE. - KAINS	60	MARIN AVE.	DARTMOUTH ST.	52	1042	O
KAINS AVE. - KAINS	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	59	574	R
KEY ROUTE BLVD. - KEYRO	30	SOLANO AVE.	MARIN AVE.	63	973	R
KEY ROUTE BLVD. - KEYRO	40	MARIN AVE.	DARTMOUTH ST.	70	1045	R
KEY ROUTE BLVD. - KEYRO	50	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	46	704	R
KEY ROUTE BLVD. NB - KEYRO	60	SOLANO AVE.	PORTLAND AVE.	30	1255	C
KEY ROUTE BLVD. NB - KEYRO	70	PORTLAND AVE.	CITY LIMIT (EL CERRITO)	38	1525	C
KEY ROUTE BLVD. SB - KEYRO	10	CITY LIMIT (EL CERRTIO)	PORTLAND AVE.	28	1250	C
KEY ROUTE BLVD. SB - KEYRO	20	PORTLAND AVE.	SOLANO AVE.	44	1525	C
MADISON ST. - MADISO	10	NORTH END	CLAY ST.	89	404	R
MADISON ST. - MADISO	20	CLAY ST.	CASTRO. ST.	89	668	R
MADISON ST. - MADISO	30	CASTRO. ST.	WASHINGTON AVE.	89	668	R
MADISON ST. - MADISO	40	WASHINGTON AVE.	SOLANO AVE.	89	718	R
MADISON ST. - MADISO	50	SOLANO AVE.	BUCHANAN ST.	91	793	R
MANOR WAY - MANOR	10	VENTURA AVE	ORDWAY ST	79	216	R

City of Albany
Desktop Reference Alphabetical

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
MANOR WAY - MANOR	20	ORDWAY ST	PERALTA AVE	85	228	R
MARIN AVE. - MARIN	20	SAN PABLO AV	CORNELL AVE	96	775	A
MARIN AVE. - MARIN	30	CORNELL AVE	MASONIC AVE	61	725	A
MARIN AVE. - MARIN	40	MASONIC AVE.	SANTA FE AVE.	55	1286	A
MARIN AVE. - MARIN	50	SANTA FE AVE.	PERALTA AVE.	54	1032	A
MARIN AVE. - MARIN	60	PERALTA AVE.	CITY LIMIT (BERKELEY)	69	930	A
MARIN AVE. (EXTENSION) - MARINE	10	JACKSON ST.	SAN PABLO AVE.	72	875	A
MASONIC AVE. - MASONI	10	BRIGHTON AVE.	GARFIELD AVE.	65	590	C
MASONIC AVE. - MASONI	20	GARFIELD AVE.	PORTLAND AVE.	66	589	C
MASONIC AVE. - MASONI	30	PORTLAND AVE.	WASHINGTON AVE.	46	589	C
MASONIC AVE. - MASONI	40	WASHINGTON AVE.	SOLANO AVE.	37	843	C
MASONIC AVE. - MASONI	50	SOLANO AVE.	MARIN AVE.	71	1007	C
MASONIC AVE. - MASONI	60	MARIN AVE.	DARTMOUTH ST.	82	1042	C
MASONIC AVE. - MASONI	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	65	670	C
NEILSON ST. - NEILSO	10	SOLANO AVE	MARIN AVE.	35	521	R
NEILSON ST. - NEILSO	20	MARIN AVE.	SONOMA ST.	90	610	R
NEILSON ST. - NEILSO	30	SONOMA ST.	FRANCIS ST. (N)	57	1298	R
NEILSON ST. - NEILSO	40	FRANCIS ST. (N)	CITY LIMIT (BERKELEY)	72	600	R
OCEAN VIEW BIKE PATH - OCEAN	10	SAN PABLO AVE	JACKSON ST	85	875	O
OCEAN VIEW BIKE PATH - OCEAN	20	70' W/O JACKSON ST	USDA ENTRANCE	78	625	O
OCEAN VIEW BIKE PATH - OCEAN	30	USDA ENTRANCE	BUCHANAN ST	83	500	O
ORDWAY ST. - ORDWAY	10	SOLANO AVE.	MARIN AVE.	72	594	R
ORDWAY ST. - ORDWAY	20	MARIN AVE.	SONOMA ST.	29	711	R
ORDWAY ST. - ORDWAY	30	SONOMA ST.	CL SOUTH OF POSEN AVE.	38	1293	R
PERALTA AVE. - PERALT	10	SOLANO AVE	MARIN AVE.	90	500	C
PERALTA AVE. - PERALT	20	MARIN AVE.	SONOMA ST.	89	750	C
PERALTA AVE. - PERALT	30	SONOMA ST.	FRANCIS ST.	70	1288	C
PERALTA AVE. - PERALT	40	FRANCIS ST.	CITY LIMIT (BERKELEY)	72	587	C
PIERCE ST. - PIERCE	10	CITY LIMIT (EL CERRITO)	404' S/O CITY LIMIT	78	404	A
PIERCE ST. - PIERCE	20	404' S/O CITY LIMIT	1946' S/O CITY LIMIT	80	1542	A
PIERCE ST. - PIERCE	30	1946' S/O CITY LIMIT	CALHOUN ST.	74	1339	A
PIERCE ST. - PIERCE	40	CALHOUN ST.	SOLANO AVE.	74	488	A
PIERCE ST. - PIERCE	50	SOLANO AVE.	BUCHANAN ST.	72	513	A
POLK ST. - POLKS	10	WASHINGTON AVE.	SOLANO AVE.	49	302	R
POLK ST. - POLKS	20	SOLANO AVE.	BUCHANAN ST.	65	647	R
POMONA AVE. - POMONA	10	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	77	495	R
POMONA AVE. - POMONA	20	PORTLAND AVE.	WASHINGTON AVE. (S)	69	723	O
POMONA AVE. - POMONA	30	WASHINGTON AVE. (S)	SOLANO AVE.	75	752	O
POMONA AVE. - POMONA	40	SOLANO AVE.	MARIN AVE.	86	915	O
POMONA AVE. - POMONA	50	MARIN AVE.	SANTA FE AVE.	80	1245	O
PORTLAND AVE. - PORTLA	10	SAN PABLO AV	CORNELL AVE.	76	730	C
PORTLAND AVE. - PORTLA	15	CORNELL AVE.	TALBOT AVE.	94	259	C
PORTLAND AVE. - PORTLA	20A	TALBOT AVE.	MASONIC AVE.	94	500	C
PORTLAND AVE. - PORTLA	20B	MASONIC AVE.	KEY ROUTE BLVD. SB	83	542	C
PORTLAND AVE. - PORTLA	30	KEY ROUTE BLVD. SB	CARMEL AVE.	77	771	C
PORTLAND AVE. - PORTLA	40	CARMEL AVE.	CITY LIMIT (BERKELEY)	70	1015	C

City of Albany
Desktop Reference Alphabetical

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
POSEN AVE. - POSEN	10	PERALTA AVE.	VENTURA AVE.	31	825	O
POSEN AVE. - POSEN	20	VENTURA AVE.	CITY LIMIT (BERKELEY)	45	700	O
RAMONA AVE. - RAMONA	10	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	90	362	O
RAMONA AVE. - RAMONA	20	PORTLAND AVE.	WASHINGTON AVE.	90	661	O
RAMONA AVE. - RAMONA	30	WASHINGTON AVE.	SOLANO AVE.	22	791	O
RAMONA AVE. - RAMONA	40	SOLANO AVE.	MARIN AVE.	45	863	O
RAMONA AVE. - RAMONA	50	MARIN AVE.	SANTA FE AVE.	44	808	O
SAN CARLOS AVE. - SANCA	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	90	979	R
SAN CARLOS AVE. - SANCA	20	PORTLAND AVE.	WASHINGTON AVE.	90	664	R
SAN CARLOS AVE. - SANCA	30	WASHINGTON AVE.	SOLANO AVE.	33	737	R
SAN GABRIEL AVE. - SANGA	10	BRIGHTON AV	PORTLAND AVE.	90	1124	R
SANTA FE AVE. - SANTA	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	69	1141	C
SANTA FE AVE. - SANTA	20	PORTLAND AVE.	WASHINGTON AVE.	74	636	C
SANTA FE AVE. - SANTA	30	WASHINGTON AVE.	SOLANO AVE.	90	721	C
SANTA FE AVE. - SANTA	40	SOLANO AVE.	MARIN AVE.	75	753	C
SANTA FE AVE. - SANTA	50	MARIN AVE.	ROMONA AVE.	55	978	C
SANTA FE AVE. - SANTA	60	ROMONA AVE.	CITY LIMIT (BERKELEY)	55	1118	C
SOLANO AVE. - SOLANO	10A	CLEVELAND AVE.	FILLMORE ST.	28	675	A
SOLANO AVE. - SOLANO	10B	FILLMORE ST.	POLK ST.	39	515	A
SOLANO AVE. - SOLANO	23	POLK ST.	JACKSON ST.	38	480	C
SOLANO AVE. - SOLANO	25	JACKSON ST.	SAN PABLO AV.	72	832	C
SOLANO AVE. - SOLANO	30	SAN PABLO AV	MASONIC AVE.	71	1510	A
SOLANO AVE. - SOLANO	40A	MASONIC AVE.	POMONA AVE.	45	455	A
SOLANO AVE. - SOLANO	40B	POMONA AVE.	SANTA FE AVE.	53	935	A
SOLANO AVE. - SOLANO	50A	SANTA FE AVE.	PERALTA AVE	49	864	A
SOLANO AVE. - SOLANO	50B	PERALTA AVE	CITY LIMIT (BERKELEY)	49	954	A
SONOMA ST. - SONOMA	10	CURTIS ST.	PERALTA AVE.	77	602	O
SONOMA ST. - SONOMA	20	PERALTA AVE.	CITY LIMIT (BERKELEY)	63	874	O
SPOKANE AVE. - SPOKAN	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	89	1286	O
SPOKANE AVE. - SPOKAN	20	PORTLAND AVE.	WASHINGTON AVE.	90	623	R
STANNAGE AVE. - STANNA	10	NORTH END	GARFIELD AVE.	65	966	R
STANNAGE AVE. - STANNA	20	GARFIELD AVE.	PORTLAND AVE.	75	591	R
STANNAGE AVE. - STANNA	30	PORTLAND AVE.	WASHINGTON AVE.	73	586	R
STANNAGE AVE. - STANNA	40	WASHINGTON AVE.	SOLANO AVE.	51	672	R
STANNAGE AVE. - STANNA	50	SOLANO AVE.	MARIN AVE.	68	1189	R
STANNAGE AVE. - STANNA	60	MARIN AVE.	DARTMOUTH ST.	56	1044	R
STANNAGE AVE. - STANNA	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	79	558	R
TAFT ST. - TAFT	10	HILLSIDE AVE.	END	39	1515	R
TALBOT AVE. - TALBOT	10	PARKING LOT	GARFIELD AVE.	43	1046	O
TALBOT AVE. - TALBOT	20	GARFIELD AVE.	PORTLAND AVE.	41	589	O
TALBOT AVE. - TALBOT	30	PORTLAND AVE.	WASHINGTON AVE.	36	589	O
TALBOT AVE. - TALBOT	40	WASHINGTON AVE.	SOLANO AVE.	91	743	O
TALBOT AVE. - TALBOT	50	SOLANO AVE.	MARIN AVE.	90	1093	O
TALBOT AVE. - TALBOT	60	MARIN AVE.	DARTMOUTH ST.	42	1042	O
TALBOT AVE. - TALBOT	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	54	620	O
TAYLOR ST. - TAYLOR	10	SOLANO AVE.	BUCHANAN ST.	77	614	R

City of Albany
Desktop Reference Alphabetical

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
TERRACE ST. - TERRAC	10	NIELSEN ST.	TEVLIN ST.	91	242	R
TEVLIN ST. - TEVLIN	10	FRANCIS ST.	END	77	421	R
TEVLIN ST. - TEVLIN	20	TERRACE ST.	N END	90	568	R
THOUSAND OAKS BLVD. - THOUSA	10	KEY ROUTE BLVD. SB	CARMEL AVE.	75	765	C
THOUSAND OAKS BLVD. - THOUSA	21	CARMEL AVE	SANTA FE AVE	79	510	C
THOUSAND OAKS BLVD. - THOUSA	22	SANTA FE AVE	CITY LIMIT (BERKELEY)	79	400	C
VENTURA AVE. - VENTUR	10	SOLANO AVE.	MARIN AVE.	43	691	R
VENTURA AVE. - VENTUR	20	MARIN AVE.	SONOMA ST.	54	726	R
VENTURA AVE. - VENTUR	30	SONOMA ST.	POSEN AVE.	33	1014	R
VISALIA - VISALI	10	CURTIS ST.	CITY LIMIT (BERKELEY)	78	108	R
WASHINGTON AVE. - WASHIN	10	CLEVELAND AVE.	PIERCE ST	42	391	R
WASHINGTON AVE. - WASHIN	20	PIERCE ST.	CERRITO ST.	32	1192	R
WASHINGTON AVE. - WASHIN	30	CERRITO ST.	JACKSON ST.	36	286	R
WASHINGTON AVE. - WASHIN	40	JACKSON ST.	SAN PABLO AV	59	750	R
WASHINGTON AVE. - WASHIN	50	SAN PABLO AV	TALBOT AVE.	31	976	C
WASHINGTON AVE. - WASHIN	60	TALBOT AVE.	POMONA AVE.	32	1217	C
WASHINGTON AVE. - WASHIN	70	POMONA AVE.	SANTA FE AVE.	41	1016	C
WASHINGTON AVE. - WASHIN	80	SANTA FE AVE.	CITY LIMIT (BERKELEY)	42	508	C
WEST PL. - WESTP	10	POSEN AVE.	END	90	207	R

Street List PCI High to Low

City of Albany

Desktop Reference PCI High to Low

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
ADAMS ST. - ADAMS	10	BUCHANAN ST.	SOLANO AVE	48	845	O
ADAMS ST. - ADAMS	20	SOLANO AVE	WASHINGTON AVE	66	718	O
ADAMS ST. - ADAMS	30	WASHINGTON AVE.	CASTRO ST	95	668	O
ADAMS ST. - ADAMS	40	CASTRO ST	CLAY ST	95	668	O
ADAMS ST. - ADAMS	50	CLAY ST	NORTH END	95	575	O
ALBANY TERR - ALBANYT	10	NIELSEN ST.	TEVLIN ST.	79	230	R
BEVERLY PL. - BEVERL	10	VENTURA AVE.	CITY LIMIT (BERKELEY)	38	358	R
BRIGHTON AVE. - BRIGHT	10	SAN PABLO AV	EVELYN AVE.	37	1246	C
BRIGHTON AVE. - BRIGHT	20	EVELYN AVE.	KEY ROUTE BLVD.	43	1120	C
BUCHANAN AVE - BUCHAV	10	CLEVELAND AVE (W)	CLEVELAND AVE (E)	29	160	A
BUCHANAN AVE - BUCHAV	20	CLEVELAND AVE. (E)	E END at PIERCE ST.	71	250	A
BUCHANAN ST EB - BUCHEB	40	PIERCE ST.	JACKSON ST.	66	1260	A
BUCHANAN ST WB - BUCHWB	50	JACKSON ST	PIERCE ST	63	1260	A
BUCHANAN ST WB - BUCHWB	50B	PIERCE ST	MADISON ST	74	1500	A
BUCHANAN ST WB - BUCHWB	60	SAN PABLO AV	JACKSON ST	69	767	A
BUCHANAN ST. - BUCHAN	30	OVERPASS	PIERCE ST.	31	780	A
CALHOUN ST. - CALHOU	10	PIERCE ST.	END	39	178	R
CARMEL AVE. - CARMEL	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	90	981	O
CARMEL AVE. - CARMEL	20	PORTLAND AVE.	WASHINGTON AVE.	71	661	R
CARMEL AVE. - CARMEL	30	WASHINGTON AVE.	SOLANO AVE.	34	762	R
CARMEL AVE. - CARMEL	40	SOLANO AVE.	MARIN AVE.	25	823	R
CASTRO. ST. - CASTRO	10	JACKSON ST.	SAN PABLO AV	55	724	R
CERRITO ST. - CERRIT	10	HILLSIDE AVE.	WASHINGTON AVE.	87	461	R
CERRITO ST. - CERRIT	20	WASHINGTON AVE.	SOLANO AVE.	34	688	R
CERRITO ST. - CERRIT	30	SOLANO AVE.	BUCHANAN ST.	54	700	R
CLAY ST. - CLAYS	10	MADISON ST	SAN PABLO AV	43	500	R
CLEVELAND AVE. - CLEVEL	10	CITY LIMIT (EL CERRITO)	RAMP ON HWY 80	16	1921	A
CLEVELAND AVE. - CLEVEL	20	RAMP ON HWY 80	PVMNT CHG	58	770	A
CLEVELAND AVE. - CLEVEL	30	PVMNT CHG	WASHINGTON AVE	30	254	A
CLEVELAND AVE. - CLEVEL	40	WASHINGTON AVE.	JOHNSON ST.	31	510	A
CLEVELAND AVE. - CLEVEL	50	JOHNSON ST.	BUCHANAN ST.	21	188	A
CLEVELAND AVE. - CLEVEL	60	BUCHANAN AVE	BUCHANAN ST STOP SIGN	24	366	A
CORNELL AVE. - CORNEL	10	PARKING LOT	BRIGHTON AVE	48	446	R
CORNELL AVE. - CORNEL	20	BRIGHTON AVE	GARFIELD AVE	52	582	R
CORNELL AVE. - CORNEL	30	GARFIELD AVE.	PORTLAND AVE.	28	589	R
CORNELL AVE. - CORNEL	40	PORTLAND AVE.	WASHINGTON AVE.	46	589	R
CORNELL AVE. - CORNEL	50	WASHINGTON AVE.	SOLANO AVE.	31	701	R
CORNELL AVE. - CORNEL	60	SOLANO AVE.	MARIN AVE.	30	1140	R
CORNELL AVE. - CORNEL	70	MARIN AVE.	DARTMOUTH ST.	67	1042	R
CORNELL AVE. - CORNEL	80	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	67	494	R
CURTIS ST. - CURTIS	10	CITY LIMIT (KENSINGTON)	PORTLAND AVE.	90	1318	O
CURTIS ST. - CURTIS	20	PORTLAND AVE.	WASHINGTON AVE.	90	661	R
CURTIS ST. - CURTIS	30	WASHINGTON AVE.	SOLANO AVE.	90	684	R
CURTIS ST. - CURTIS	40	SOLANO AVE.	MARIN AVE.	61	631	R
CURTIS ST. - CURTIS	50	MARIN AVE	SONOMA AVE	62	405	O
CURTIS ST. - CURTIS	60	SONOMA AVE	FRANCIS ST	64	1207	R

City of Albany

Desktop Reference PCI High to Low

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
CURTIS ST. - CURTIS	70	FRANCIS ST.	CITY LIMIT (BERKELEY)	66	596	R
DARTMOUTH ST. - DARTMO	10	SAN PABLO AV	TALBOT AVE.	47	1000	O
DARTMOUTH ST. - DARTMO	20	TALBOT AVE.	POMONA AVE.	65	975	O
EASTSHORE HWY. - EASTSH	10	CITY LIMIT (BERKELEY)	1025 EASTSHORE HWY-PAVT CHANGE	60	1325	A
EASTSHORE HWY. - EASTSH	20	1025 EASTSHORE HWY PAVT CHANGE	BUCHANAN ST(BRIDGE)	74	600	A
EVELYN AVE. - EVELYN	10	NORTH END	BRIGHTON AVE	90	462	R
EVELYN AVE. - EVELYN	20	BRIGHTON AVE	PORTLAND AVE.	94	1215	R
EVELYN AVE. - EVELYN	30	PORTLAND AVE.	WASHINGTON AVE.	62	589	R
EVELYN AVE. - EVELYN	40	WASHINGTON AVE.	SOLANO AVE.	60	792	R
EVELYN AVE. - EVELYN	50	SOLANO AVE.	MARIN AVE.	50	1042	R
EVELYN AVE. - EVELYN	60	MARIN AVE.	DARTMOUTH ST.	59	1042	R
EVELYN AVE. - EVELYN	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	90	620	R
FILLMORE ST. - FILLMO	10	SOLANO AVE.	BUCHANAN ST.	53	557	R
FRANCIS ST. - FRANCI	10	SANTA FE AVE.	NIELSEN ST.	80	475	O
FRANCIS ST. - FRANCI	20	NIELSEN ST.	PERALTA AVE.	77	393	O
GARFIELD AVE. - GARFIE	10	SAN PABLO AV	CORNELL AVE.	60	730	R
GARFIELD AVE. - GARFIE	20	CORNELL AVE.	MASONIC AVE.	72	736	R
GATEVIEW AVE. - GATEVI	10	WASHINGTON AVE.	END	35	941	R
HILLSIDE AVE. - HILLSI	10	JACKSON ST	TAFT ST	31	786	R
HILLSIDE AVE. - HILLSI	20	TAFT ST.	SOUTH END	38	1375	R
JACKSON ST. - JACKSO	10	N END	CASTRO. ST.	21	1547	R
JACKSON ST. - JACKSO	20	CASTRO. ST.	WASHINGTON AVE.	35	701	O
JACKSON ST. - JACKSO	30	WASHINGTON AVE.	SOLANO AVE.	42	721	O
JACKSON ST. - JACKSO	40	SOLANO AVE.	BUCHANAN ST.	91	752	C
JACKSON ST. - JACKSO	50	MONROE ST	CITY LIMIT (BERKELEY)	68	350	O
JOHNSON ST. - JOHNSO	10	CLEVELAND AVE.	PIERCE ST.	83	429	R
KAINS AVE. - KAINS	10	PARKING LOT	GARFIELD AVE.	49	963	O
KAINS AVE. - KAINS	20	GARFIELD AVE.	PORTLAND AVE.	62	589	O
KAINS AVE. - KAINS	30	PORTLAND AVE.	WASHINGTON AVE.	76	589	O
KAINS AVE. - KAINS	40	WASHINGTON AVE.	SOLANO AVE.	61	606	O
KAINS AVE. - KAINS	50	SOLANO AVE.	MARIN AVE.	90	1235	O
KAINS AVE. - KAINS	60	MARIN AVE.	DARTMOUTH ST.	52	1042	O
KAINS AVE. - KAINS	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	59	574	R
KEY ROUTE BLVD. - KEYRO	30	SOLANO AVE.	MARIN AVE.	63	973	R
KEY ROUTE BLVD. - KEYRO	40	MARIN AVE.	DARTMOUTH ST.	70	1045	R
KEY ROUTE BLVD. - KEYRO	50	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	46	704	R
KEY ROUTE BLVD. NB - KEYRO	60	SOLANO AVE.	PORTLAND AVE.	30	1255	C
KEY ROUTE BLVD. NB - KEYRO	70	PORTLAND AVE.	CITY LIMIT (EL CERRITO)	38	1525	C
KEY ROUTE BLVD. SB - KEYRO	10	CITY LIMIT (EL CERRTIO)	PORTLAND AVE.	28	1250	C
KEY ROUTE BLVD. SB - KEYRO	20	PORTLAND AVE.	SOLANO AVE.	44	1525	C
MADISON ST. - MADISO	10	NORTH END	CLAY ST.	89	404	R
MADISON ST. - MADISO	20	CLAY ST.	CASTRO. ST.	89	668	R
MADISON ST. - MADISO	30	CASTRO. ST.	WASHINGTON AVE.	89	668	R
MADISON ST. - MADISO	40	WASHINGTON AVE.	SOLANO AVE.	89	718	R
MADISON ST. - MADISO	50	SOLANO AVE.	BUCHANAN ST.	91	793	R
MANOR WAY - MANOR	10	VENTURA AVE	ORDWAY ST	79	216	R

City of Albany
Desktop Reference PCI High to Low

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
MANOR WAY - MANOR	20	ORDWAY ST	PERALTA AVE	85	228	R
MARIN AVE. - MARIN	20	SAN PABLO AV	CORNELL AVE	96	775	A
MARIN AVE. - MARIN	30	CORNELL AVE	MASONIC AVE	61	725	A
MARIN AVE. - MARIN	40	MASONIC AVE.	SANTA FE AVE.	55	1286	A
MARIN AVE. - MARIN	50	SANTA FE AVE.	PERALTA AVE.	54	1032	A
MARIN AVE. - MARIN	60	PERALTA AVE.	CITY LIMIT (BERKELEY)	69	930	A
MARIN AVE. (EXTENSION) - MARINE	10	JACKSON ST.	SAN PABLO AVE.	72	875	A
MASONIC AVE. - MASONI	10	BRIGHTON AVE.	GARFIELD AVE.	65	590	C
MASONIC AVE. - MASONI	20	GARFIELD AVE.	PORTLAND AVE.	66	589	C
MASONIC AVE. - MASONI	30	PORTLAND AVE.	WASHINGTON AVE.	46	589	C
MASONIC AVE. - MASONI	40	WASHINGTON AVE.	SOLANO AVE.	37	843	C
MASONIC AVE. - MASONI	50	SOLANO AVE.	MARIN AVE.	71	1007	C
MASONIC AVE. - MASONI	60	MARIN AVE.	DARTMOUTH ST.	82	1042	C
MASONIC AVE. - MASONI	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	65	670	C
NEILSON ST. - NEILSO	10	SOLANO AVE	MARIN AVE.	35	521	R
NEILSON ST. - NEILSO	20	MARIN AVE.	SONOMA ST.	90	610	R
NEILSON ST. - NEILSO	30	SONOMA ST.	FRANCIS ST. (N)	57	1298	R
NEILSON ST. - NEILSO	40	FRANCIS ST. (N)	CITY LIMIT (BERKELEY)	72	600	R
OCEAN VIEW BIKE PATH - OCEAN	10	SAN PABLO AVE	JACKSON ST	85	875	O
OCEAN VIEW BIKE PATH - OCEAN	20	70' W/O JACKSON ST	USDA ENTRANCE	78	625	O
OCEAN VIEW BIKE PATH - OCEAN	30	USDA ENTRANCE	BUCHANAN ST	83	500	O
ORDWAY ST. - ORDWAY	10	SOLANO AVE.	MARIN AVE.	72	594	R
ORDWAY ST. - ORDWAY	20	MARIN AVE.	SONOMA ST.	29	711	R
ORDWAY ST. - ORDWAY	30	SONOMA ST.	CL SOUTH OF POSEN AVE.	38	1293	R
PERALTA AVE. - PERALT	10	SOLANO AVE	MARIN AVE.	90	500	C
PERALTA AVE. - PERALT	20	MARIN AVE.	SONOMA ST.	89	750	C
PERALTA AVE. - PERALT	30	SONOMA ST.	FRANCIS ST.	70	1288	C
PERALTA AVE. - PERALT	40	FRANCIS ST.	CITY LIMIT (BERKELEY)	72	587	C
PIERCE ST. - PIERCE	10	CITY LIMIT (EL CERRITO)	404' S/O CITY LIMIT	78	404	A
PIERCE ST. - PIERCE	20	404' S/O CITY LIMIT	1946' S/O CITY LIMIT	80	1542	A
PIERCE ST. - PIERCE	30	1946' S/O CITY LIMIT	CALHOUN ST.	74	1339	A
PIERCE ST. - PIERCE	40	CALHOUN ST.	SOLANO AVE.	74	488	A
PIERCE ST. - PIERCE	50	SOLANO AVE.	BUCHANAN ST.	72	513	A
POLK ST. - POLKS	10	WASHINGTON AVE.	SOLANO AVE.	49	302	R
POLK ST. - POLKS	20	SOLANO AVE.	BUCHANAN ST.	65	647	R
POMONA AVE. - POMONA	10	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	77	495	R
POMONA AVE. - POMONA	20	PORTLAND AVE.	WASHINGTON AVE. (S)	69	723	O
POMONA AVE. - POMONA	30	WASHINGTON AVE. (S)	SOLANO AVE.	75	752	O
POMONA AVE. - POMONA	40	SOLANO AVE.	MARIN AVE.	86	915	O
POMONA AVE. - POMONA	50	MARIN AVE.	SANTA FE AVE.	80	1245	O
PORTLAND AVE. - PORTLA	10	SAN PABLO AV	CORNELL AVE.	76	730	C
PORTLAND AVE. - PORTLA	15	CORNELL AVE.	TALBOT AVE.	94	259	C
PORTLAND AVE. - PORTLA	20A	TALBOT AVE.	MASONIC AVE.	94	500	C
PORTLAND AVE. - PORTLA	20B	MASONIC AVE.	KEY ROUTE BLVD. SB	83	542	C
PORTLAND AVE. - PORTLA	30	KEY ROUTE BLVD. SB	CARMEL AVE.	77	771	C
PORTLAND AVE. - PORTLA	40	CARMEL AVE.	CITY LIMIT (BERKELEY)	70	1015	C

City of Albany

Desktop Reference PCI High to Low

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
POSEN AVE. - POSEN	10	PERALTA AVE.	VENTURA AVE.	31	825	O
POSEN AVE. - POSEN	20	VENTURA AVE.	CITY LIMIT (BERKELEY)	45	700	O
RAMONA AVE. - RAMONA	10	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	90	362	O
RAMONA AVE. - RAMONA	20	PORTLAND AVE.	WASHINGTON AVE.	90	661	O
RAMONA AVE. - RAMONA	30	WASHINGTON AVE.	SOLANO AVE.	22	791	O
RAMONA AVE. - RAMONA	40	SOLANO AVE.	MARIN AVE.	45	863	O
RAMONA AVE. - RAMONA	50	MARIN AVE.	SANTA FE AVE.	44	808	O
SAN CARLOS AVE. - SANCA	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	90	979	R
SAN CARLOS AVE. - SANCA	20	PORTLAND AVE.	WASHINGTON AVE.	90	664	R
SAN CARLOS AVE. - SANCA	30	WASHINGTON AVE.	SOLANO AVE.	33	737	R
SAN GABRIEL AVE. - SANGA	10	BRIGHTON AV	PORTLAND AVE.	90	1124	R
SANTA FE AVE. - SANTA	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	69	1141	C
SANTA FE AVE. - SANTA	20	PORTLAND AVE.	WASHINGTON AVE.	74	636	C
SANTA FE AVE. - SANTA	30	WASHINGTON AVE.	SOLANO AVE.	90	721	C
SANTA FE AVE. - SANTA	40	SOLANO AVE.	MARIN AVE.	75	753	C
SANTA FE AVE. - SANTA	50	MARIN AVE.	ROMONA AVE.	55	978	C
SANTA FE AVE. - SANTA	60	ROMONA AVE.	CITY LIMIT (BERKELEY)	55	1118	C
SOLANO AVE. - SOLANO	10A	CLEVELAND AVE.	FILLMORE ST.	28	675	A
SOLANO AVE. - SOLANO	10B	FILLMORE ST.	POLK ST.	39	515	A
SOLANO AVE. - SOLANO	23	POLK ST.	JACKSON ST.	38	480	C
SOLANO AVE. - SOLANO	25	JACKSON ST.	SAN PABLO AV.	72	832	C
SOLANO AVE. - SOLANO	30	SAN PABLO AV	MASONIC AVE.	71	1510	A
SOLANO AVE. - SOLANO	40A	MASONIC AVE.	POMONA AVE.	45	455	A
SOLANO AVE. - SOLANO	40B	POMONA AVE.	SANTA FE AVE.	53	935	A
SOLANO AVE. - SOLANO	50A	SANTA FE AVE.	PERALTA AVE	49	864	A
SOLANO AVE. - SOLANO	50B	PERALTA AVE	CITY LIMIT (BERKELEY)	49	954	A
SONOMA ST. - SONOMA	10	CURTIS ST.	PERALTA AVE.	77	602	O
SONOMA ST. - SONOMA	20	PERALTA AVE.	CITY LIMIT (BERKELEY)	63	874	O
SPOKANE AVE. - SPOKAN	10	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	89	1286	O
SPOKANE AVE. - SPOKAN	20	PORTLAND AVE.	WASHINGTON AVE.	90	623	R
STANNAGE AVE. - STANNA	10	NORTH END	GARFIELD AVE.	65	966	R
STANNAGE AVE. - STANNA	20	GARFIELD AVE.	PORTLAND AVE.	75	591	R
STANNAGE AVE. - STANNA	30	PORTLAND AVE.	WASHINGTON AVE.	73	586	R
STANNAGE AVE. - STANNA	40	WASHINGTON AVE.	SOLANO AVE.	51	672	R
STANNAGE AVE. - STANNA	50	SOLANO AVE.	MARIN AVE.	68	1189	R
STANNAGE AVE. - STANNA	60	MARIN AVE.	DARTMOUTH ST.	56	1044	R
STANNAGE AVE. - STANNA	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	79	558	R
TAFT ST. - TAFT	10	HILLSIDE AVE.	END	39	1515	R
TALBOT AVE. - TALBOT	10	PARKING LOT	GARFIELD AVE.	43	1046	O
TALBOT AVE. - TALBOT	20	GARFIELD AVE.	PORTLAND AVE.	41	589	O
TALBOT AVE. - TALBOT	30	PORTLAND AVE.	WASHINGTON AVE.	36	589	O
TALBOT AVE. - TALBOT	40	WASHINGTON AVE.	SOLANO AVE.	91	743	O
TALBOT AVE. - TALBOT	50	SOLANO AVE.	MARIN AVE.	90	1093	O
TALBOT AVE. - TALBOT	60	MARIN AVE.	DARTMOUTH ST.	42	1042	O
TALBOT AVE. - TALBOT	70	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	54	620	O
TAYLOR ST. - TAYLOR	10	SOLANO AVE.	BUCHANAN ST.	77	614	R

City of Albany

Desktop Reference PCI High to Low

Street Name	Section ID	Beg Location	End Location	PCI	Length	Functional Class
TERRACE ST. - TERRAC	10	NIELSEN ST.	TEVLIN ST.	91	242	R
TEVLIN ST. - TEVLIN	10	FRANCIS ST.	END	77	421	R
TEVLIN ST. - TEVLIN	20	TERRACE ST.	N END	90	568	R
THOUSAND OAKS BLVD. - THOUSA	10	KEY ROUTE BLVD. SB	CARMEL AVE.	75	765	C
THOUSAND OAKS BLVD. - THOUSA	21	CARMEL AVE	SANTA FE AVE	79	510	C
THOUSAND OAKS BLVD. - THOUSA	22	SANTA FE AVE	CITY LIMIT (BERKELEY)	79	400	C
VENTURA AVE. - VENTUR	10	SOLANO AVE.	MARIN AVE.	43	691	R
VENTURA AVE. - VENTUR	20	MARIN AVE.	SONOMA ST.	54	726	R
VENTURA AVE. - VENTUR	30	SONOMA ST.	POSEN AVE.	33	1014	R
VISALIA - VISALI	10	CURTIS ST.	CITY LIMIT (BERKELEY)	78	108	R
WASHINGTON AVE. - WASHIN	10	CLEVELAND AVE.	PIERCE ST	42	391	R
WASHINGTON AVE. - WASHIN	20	PIERCE ST.	CERRITO ST.	32	1192	R
WASHINGTON AVE. - WASHIN	30	CERRITO ST.	JACKSON ST.	36	286	R
WASHINGTON AVE. - WASHIN	40	JACKSON ST.	SAN PABLO AV	59	750	R
WASHINGTON AVE. - WASHIN	50	SAN PABLO AV	TALBOT AVE.	31	976	C
WASHINGTON AVE. - WASHIN	60	TALBOT AVE.	POMONA AVE.	32	1217	C
WASHINGTON AVE. - WASHIN	70	POMONA AVE.	SANTA FE AVE.	41	1016	C
WASHINGTON AVE. - WASHIN	80	SANTA FE AVE.	CITY LIMIT (BERKELEY)	42	508	C
WEST PL. - WESTP	10	POSEN AVE.	END	90	207	R

City of Albany
2019 PMP Update (PTAP Round 20)

Data Quality Management Report

For the 2019 Pavement Management Program update for the City of Albany, Pavement Engineering Inc. (PEI) rated about 31 centerline miles of Arterial, Collector, and Residential roadways. Those 31 centerline miles are broken down into 215 different management segments of varying lengths and widths. PEI completed their initial rating assessment in June 2019.

Once the initial ratings were completed, the field crew then preformed a 2nd rating on a randomly selected 10% of segments. This 2nd rating is intended as a consistency check, which ensures that our raters are performing evaluations consistent with our allowable range of +/- 5 PCI points. Of the 22 segments that were part of the 10% QC, 4 were found to be outside of the allowable range. Those 4 segments were re-rated by The Project Manager. Following the 10% Field Crew QC, an additional randomly selected 5% of segments were reviewed by The Project Manager.

Furthermore, an analysis was performed on the initial ratings to see how each segment's PCI has changed since the last rating was performed. Any segment found to have deteriorated more than 3 PCI points per year, or a total of 12 PCI points (since the City of Albany's PCIs were last updated in 2015) or have increased more than 1 PCI point without a documented M&R treatment, was then reviewed by The Project Manager.

Of the 215 segments reviewed, a total of 41.4%, or 89 segments, were outside of the allowable range. These segments were then reviewed by The Project Manager. We found that of the 41.4% (89 segments), 62.9% (56 segments) were deemed to be accurate in the amount they had deteriorated. 32.6% (29 segments) were found to be rated harsher than deemed necessary, and 4.5% (4 segments) were rated too leniently. Those segments' PCIs were re-rated and now reflect the proper deterioration amount and coinciding PCI.

Section V
GIS Toolbox

GIS TOOLBOX

This section is intended to introduce the new feature in StreetSaver®. The GIS portion of the program is specifically designed for those agencies that do not have "in-house" GIS departments.

GIS TOOLBOX

The GIS toolbox is a new feature available within StreetSaver®. This is one of the most powerful tools available in StreetSaver®. The ability to link the existing road segments to a base map and produce maps displaying the Current Condition, Age of Pavement, Needs Treatments, Scenario Treatments, Last Treatment and Last Year Inspected are now available with just a few key strokes. No longer does an agency need to access "outside resources" or "wait" for graphical representations of their road system.

Maps that reflect the current condition of an agency's road system are a valuable asset when meeting with Town Councils and the general public. A map of future maintenance treatments can be used to inform the residents when future work is scheduled on their road.

A basic "shapefile" is already loaded into the StreetSaver® system. From this shapefile it is just a matter of "linking" or "assigning" the beginning location and ending location of each management section found in the database.

There are a few cautions that the City of Albany should be aware of in regard to the GIS mapping. GIS is a "node" to "node" application. It uses intersections or nodes as its way to pinpoint a specific location. This means that each of the Town's management sections needs to begin and end at a point that can be defined or found by the GIS link. Using house numbers or change in pavements will need to be defined as "feet" from the nearest "node". This will produce a more precise map. Next the Street Names will need to match and that will mean a more precise accounting of "street tags". The difference between calling a tag a "drive" or an "avenue" can hinder the linking process.

TERMINOLOGY

Once the GIS Toolbox is opened there will be two master items that can be accessed.

First there is the "GIS Reporting". This screen is used to "mine" StreetSaver® data for display in GIS format. Queries can be performed using the standard StreetSaver® filter screen, using pre-defined criteria defined by the system, or by selecting an area of the map. If Section data is returned those shapes can be exported to GIS shapefiles or printed out in a map format.

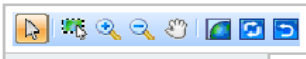
Then there is the “Section Link” screen which will match segments in the basemap based on street name, type (street tag) and/or direction. Each Section can be linked to a segment or segments in the basemap.

Explanations of the toolbars and the buttons available on the GIS Reporting screen are outlined below:

Navigation Toolbar

Select Sections from Map (Area Filter)	Click and Drag the mouse over an area on the map to search and retrieve sections within that area. **Note:** This works in conjunction with an applied Filter
Clear Area Filter	Clears the current selected area filter
Filter	Loads the Filter screen and retrieves sections based on the filter defined **Note:** This works in conjunction with an applied Area Filter
Clear Filter	Restores the shape to it’s state before any Add or Edits had occurred
Export Shapefiles	For each shape type currently showing on the map, a shapefile is created and stuffed in a ZIP file for download. This file will contain 3 files for every shape type. Those 3 files make up the Shapefile that can be used in other GIS applications
Print Map	Launches a Print Preview screen of the current Map and will resize based on the type of printer you choose

Reporting Toolbar



Select	Shows a tooltip of information regarding the section the mouse if pointing to an object.
Track Zoom In	Click and drag the mouse over an area of the map you want to Zoom in on.
Zoom In	Each click will Zoom the map in by 20%.
Zoom Out	Each click will Zoom the map OUT by 20%.
Pan	Click and drag the map around to navigate a specified direction.
Full Extent	Zooms out to the full border of your state.
Toggle Extent	Will toggle between the current Map extent and previous Map extent.
Previous Extent	Will cycle through each previous Map extent.

BASE MAP IMPLEMENTATION

Pavement Engineering Inc. reviewed the base map included with StreetSaver® and the automatic linking process. The review found most of the segments were linked correctly. Any of the segments that were not previously linked were fixed so they were linked.

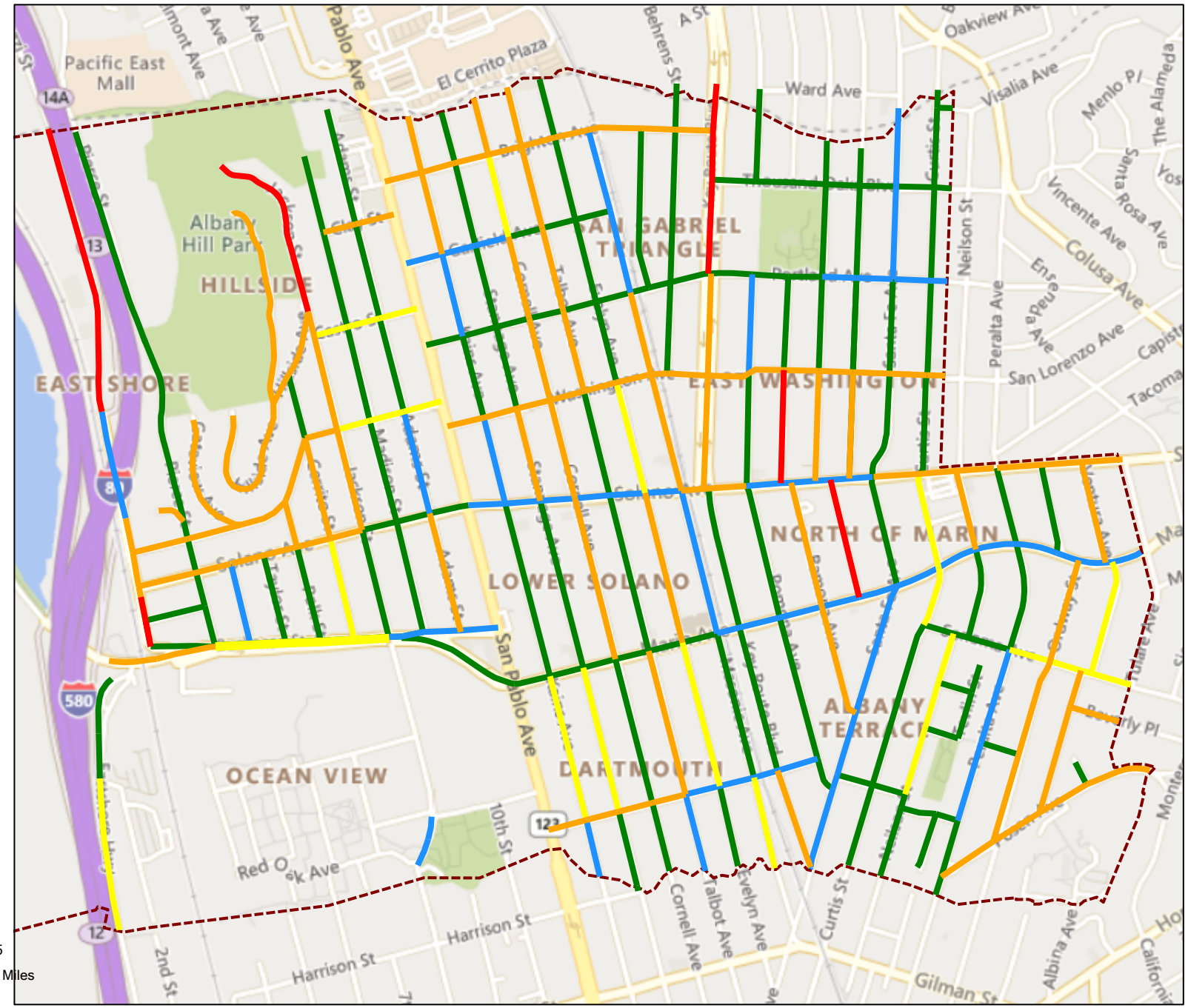
CITY OF ALBANY

Current PCI Condition

Printed: 2/4/2020

Feature Legend

- Category I - Very Good
- Category II - Good (Non-Load)
- Category III - Good (Load)
- Category IV - Poor
- Category V - Very Poor



0 0.1 0.2 0.3 0.4 0.5 Miles

Appendix A
Summarized System Information

Network Summary Statistics

Printed: 01/29/2020

	Total Sections	Total Center Miles	Total Lane Miles	Total Area (sq. ft.)	PCI
Arterial	33	5.25	10.84	1,143,574	57
Collector	39	6.25	12.50	1,188,386	59
Residential/Local	86	11.52	22.96	1,699,416	59
Other	45	6.62	13.12	1,019,604	65
Total	203	29.64	59.42	5,050,980	
				Overall Network PCI as of 9/1/2019:	60

Network Replacement Cost

Printed: 01/29/2020

Functional Class	Surface Type	Lane Miles	Unit Cost/ Square Foot	Pavement Area/ Square Feet	Cost To Replace (in thousands)
Arterial	AC	7.3	$12.00	797,203	$9,566
	AC/AC	1.4	$12.00	111,325	$1,336
	AC/PCC	1.2	$12.00	176,868	$2,122
	PCC	0.9	$4.89	58,178	$284
Collector	AC	10.6	$9.22	994,086	$9,168
	AC/AC	1.9	$9.22	194,300	$1,792
Other	AC	12.0	$6.78	933,298	$6,326
	AC/AC	1.1	$6.78	86,306	$585
Residential/Local	AC	20.7	$6.78	1,532,985	$10,390
	AC/AC	2.2	$6.78	163,767	$1,110
	PCC	0.1	$3.56	2,664	$9
	Grand Total:	59.4		5,050,980	$42,689

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		MILL AND THIN HMA OVERLAY (2")	$35.00			
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (2")	$46.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (4")	$72.00			
		V - Very Poor		RECONSTRUCT SURFACE (HMA, 8")	$108.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		MILL AND THIN HMA OVERLAY (2")	$35.00			
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (2")	$46.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (4")	$72.00			
		V - Very Poor		RECONSTRUCT SURFACE (HMA, 8")	$108.00			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		MILL AND THIN RHMA OVERLAY (2")	$38.00			
		III - Good, Load Related		MILL AND THIN RHMA OVERLAY (2")	$49.00			
		IV - Poor		MILL AND THICK RHMA/HMA OVERLAY (4")	$77.00			
		V - Very Poor		RECONSTRUCT SURFACE (HMA, 8")	$108.00			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	99		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		THICK RHMA/HMA OVERLAY (4")	$44.00			
		V - Very Poor		THICK RHMA/HMA OVERLAY (4")	$44.00			
	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.67			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		CAPE SEAL	$21.00		7	
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (2")	$43.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (3")	$58.00			
		V - Very Poor		RECONSTRUCT SURFACE (HMA, 6")	$83.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		CAPE SEAL	$21.00		7	
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (2")	$43.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (3")	$58.00			
		V - Very Poor		RECONSTRUCT SURFACE (HMA, 6")	$83.00			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.60	3		
			Surface Treatment	SLURRY SEAL	$2.60		7	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SLURRY SEAL	$2.60			
		III - Good, Load Related		THIN AC OVERLAY(1.5 INCHES)	$15.00			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$20.00			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	$45.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	99		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		AC OVERLAY	$21.50			
		V - Very Poor		AC OVERLAY	$24.50			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Collector	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.47			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Residential/Local	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		8	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		CAPE SEAL	$20.00		8	
		III - Good, Load Related		CAPE SEAL	$26.00		8	
		IV - Poor		CAPE SEAL	$29.00		8	
		V - Very Poor		RECONSTRUCT (3" HMA AND 9" FDR)	$61.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		8	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		CAPE SEAL	$20.00		8	
		III - Good, Load Related		CAPE SEAL	$26.00		8	
		IV - Poor		CAPE SEAL	$29.00		8	
		V - Very Poor		RECONSTRUCT (3" HMA AND 9" FDR)	$61.00			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$0.60	4		
			Surface Treatment	SLURRY SEAL	$2.60		8	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SLURRY SEAL	$2.60			
		III - Good, Load Related		THIN AC OVERLAY(1.5 INCHES)	$14.00			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$19.00			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	$39.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	99		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			99
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		THICK RHMA OVERLAY (2.5")	$29.00			
		V - Very Poor		THICK RHMA OVERLAY (2.5")	$32.00			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Residential/Local	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		8	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SLURRY SEAL	$4.00		8	
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (1.5")	$39.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (2.5")	$53.00			
		V - Very Poor		RECONSTRUCT (3" HMA AND 9" FDR)	$61.00			
	AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.00	3		
			Surface Treatment	SLURRY SEAL	$2.60		8	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SLURRY SEAL	$4.00		8	
		III - Good, Load Related		MILL AND THIN HMA OVERLAY (1.5")	$39.00			
		IV - Poor		MILL AND THICK HMA OVERLAY (2.5")	$53.00			
		V - Very Poor		RECONSTRUCT (3" HMA AND 9" FDR)	$61.00			
	AC/PCC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.60	4		
			Surface Treatment	SINGLE CHIP SEAL	$1.74		8	
			Restoration Treatment	MILL AND THIN OVERLAY	$15.04			3
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	$6.14			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	$8.75			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	$0.00	99		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		DO NOTHING	$0.00			
		III - Good, Load Related		DO NOTHING	$0.00			
		IV - Poor		THICK RHMA OVERLAY (2.5")	$39.00			
		V - Very Poor		THICK RHMA OVERLAY (2.5")	$42.00			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Decision Tree

Printed: 01/29/2020

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Other	ST	I - Very Good	Crack Treatment	DO NOTHING	$0.00	9		
			Surface Treatment	DO NOTHING	$0.00		99	
			Restoration Treatment	DO NOTHING	$0.00			100
		II - Good, Non-Load Related		SINGLE CHIP SEAL	$1.11			
		III - Good, Load Related		SINGLE CHIP SEAL	$1.51			
		IV - Poor		SINGLE CHIP SEAL	$1.92			
		V - Very Poor		THICK AC OVERLAY(2.5 INCHES)	$7.27			

Functional Class and Surface combination not used

Selected Treatment is not a Surface Seal

Appendix B
Budget Scenarios

Needs Analysis
&
Zero Budget
($14.1 Million for Year 1, AVG $373 Thousand for Years 2-5)

- Projected PCI/Cost Summary

Needs - Projected PCI/Cost Summary

Inflation Rate = 0.00 %

Printed: 02/03/2020

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
2020	83	59	$105,014	$13,984,150	$14,089,164
2021	80	56	$9,765	$550,980	$560,745
2022	79	54	$101,434	$521,644	$623,078
2023	79	51	$38,037	$253,320	$291,357
2024	77	48	$16,410	$0	$16,410

% PM	PM Total Cost	Rehab Total Cost	Total Cost
1.74%	$270,660	$15,310,094	$15,580,754

Maintain PCI

($1.4 Million over 5 Years)

- Pavement Network Condition Lane Miles
- Network Condition Summary
- Cost Summary

Target-Driven Scenarios
Pavement Network Condition Lane Miles

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Annual budget needs to meet target objectives

Year	Arterial	Collector	Res/Loc	Other	Preventative Maintenance	Total
2020	$551,717	$36,066	$41,845	$50,842	$105,014	$680,470
2021	$1,080,412	$129,692	$1,040	$289,009	$9,765	$1,500,153
2022	$1,357,532	$37,378	$32,806	$337,267	$101,434	$1,764,983
2023	$947,222	$227,063	$17,749	$457,928	$34,909	$1,649,962
2024	$367,952	$144,593	$481,658	$247,791	$15,915	$1,241,994

Average Yearly Total: $1,367,512

Grand Total: $6,837,562

Pavement Network prior to treatments in lane miles.

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	56	5.6%	6.6%	13
Collector	58	8.3%	8.8%	10
Other	64	8.8%	7.2%	19
Residential	58	15.5%	12.5%	16

Pavement Network after schedulable treatments applied in lane miles.

2020

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	60	8.4%	6.6%	13
Collector	59	8.3%	8.8%	10
Other	65	9.8%	7.2%	19
Residential	59	15.5%	12.5%	16

2021

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	63	10.2%	7.6%	15
Collector	57	7.1%	10.3%	10
Other	66	11.0%	7.4%	20
Residential	57	15.2%	13.1%	16

Pavement Network after schedulable treatments applied in lane miles.

2022

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	67	12.8%	6.5%	18
Collector	54	6.1%	10.3%	10
Other	68	11.7%	6.7%	21
Residential	56	13.9%	14.4%	15

2023

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	69	15.1%	5.5%	19
Collector	52	6.8%	9.6%	10
Other	70	13.2%	5.2%	23
Residential	54	13.9%	14.9%	15

2024

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	68	16.0%	5.5%	20
Collector	49	7.2%	9.6%	10
Other	71	13.9%	4.5%	24
Residential	56	15.3%	15.0%	16

Target-Driven Scenarios
Network Condition Summary

Interest: 0% Inflation: 0% Printed: 02/03/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment
2020	59	60
2021	56	60
2022	54	60
2023	51	60
2024	48	60

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	5.6%	8.3%	15.5%	8.8%	38.1%
II / III	10.5%	6.5%	5.7%	4.2%	26.8%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	8.4%	8.3%	15.5%	9.8%	42.0%
II / III	7.7%	6.5%	5.7%	3.1%	22.9%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2024 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	16.0%	7.2%	15.3%	13.9%	52.4%
II / III	1.2%	6.7%	3.3%	1.8%	13.0%
IV	1.4%	0.8%	9.5%	3.2%	15.0%
V	4.1%	8.8%	5.5%	1.3%	19.6%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Target-Driven Scenarios - Cost Summary

Interest: 0% Inflation: 0% Printed: 02/03/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Year		Rehabilitation	Preventive Maintenance		Total Cost	Deferred
2020	II	$575,456	Non-Project	$105,014	$680,470	$13,408,662
	III	$0	Project	$0		
	IV	$0				
	V	**$0**				
	Total	**$575,456**				
	Project	$0				
2021	II	$135,684	Non-Project	$9,765	$1,500,153	$14,353,742
	III	$682,312	Project	$0		
	IV	$672,392				
	V	**$0**				
	Total	**$1,490,388**				
	Project	$0				
2022	II	$283,151	Non-Project	$101,434	$1,764,983	$14,201,290
	III	$0	Project	$0		
	IV	$1,380,398				
	V	**$0**				
	Total	**$1,663,549**				
	Project	$0				
2023	II	$0	Non-Project	$34,909	$1,649,962	$13,854,300
	III	$0	Project	$0		
	IV	$1,615,053				
	V	**$0**				
	Total	**$1,615,053**				
	Project	$0				
2024	II	$0	Non-Project	$15,915	$1,241,994	$13,385,493
	III	$0	Project	$0		
	IV	$498,285				
	V	**$727,794**				
	Total	**$1,226,079**				
	Project	$0				

Summary

Functional Class	Rehabilitation	Prev. Maint.
Arterial	$4,290,247	$14,588
Collector	$493,024	$81,768
Other	$1,306,748	$76,089
Residential/Local	$480,506	$94,592
Total:	$6,570,525	$267,037

Grand Total: $6,837,562

Current Funding

($1.36 Million over 5 Years)

- Network Condition Summary
- Cost Summary
- Sections Selected for Treatment
- GIS Maps of Treatments by year

Scenarios - Network Condition Summary

Interest: 0% Inflation: 0% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2020	$1,360,000	5%	2022	$1,360,000	5%	2024	$1,360,000	5%
2021	$1,360,000	5%	2023	$1,360,000	5%			

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment	Treated Centerline Miles	Treated Lane Miles
2020	59	62	5.36	10.72
2021	56	61	5.94	11.93
2022	54	61	3.07	6.44
2023	51	60	5.42	10.83
2024	48	60	6.83	14.00

Percent Network Area by Functional Class and Condition Category

Condition in base year 2020, prior to applying treatments.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	5.6%	8.3%	15.5%	8.8%	38.1%
II / III	10.5%	6.5%	5.7%	4.2%	26.8%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	9.1%	8.8%	15.8%	11.3%	45.0%
II / III	7.0%	6.0%	5.3%	2.2%	20.5%
IV	5.1%	8.8%	11.1%	6.2%	31.2%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2024 after schedulable treatments applied.

Condition	Arterial	Collector	Res/Loc	Other	Total
I	15.1%	6.5%	16.2%	14.6%	52.4%
II / III	1.2%	6.7%	3.3%	1.6%	12.7%
IV	2.5%	1.5%	9.2%	2.0%	15.2%
V	3.9%	8.8%	4.9%	2.0%	19.6%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Scenarios - Cost Summary

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year	PM	Budget		Rehabilitation		Preventative Maintenance	Surplus PM	Deferred		Stop Gap
2020	5%	$1,360,000	II	$613,723	Non-Project	$74,649	$0	$12,730,401	Funded	$0
			III	$486,272					Unmet	$61,400
			IV	$184,087	Project	$0				
			V	$0						
			Total	$1,284,082						
			Project	$0						
2021	5%	$1,360,000	II	$135,684	Non-Project	$40,130	$27,870	$13,861,274	Funded	$0
			III	$250,445					Unmet	$960
			IV	$840,102	Project	$0				
			V	$48,000						
			Total	$1,274,231						
			Project	$0						
2022	5%	$1,360,000	II	$283,151	Non-Project	$74,045	$0	$14,116,577	Funded	$0
			III	$0					Unmet	$1,432
			IV	$923,326	Project	$0				
			V	$76,704						
			Total	$1,283,181						
			Project	$0						
2023	5%	$1,360,000	II	$0	Non-Project	$62,327	$5,673	$14,078,629	Funded	$0
			III	$0					Unmet	$1,950
			IV	$1,278,623	Project	$0				
			V	$0						
			Total	$1,278,623						
			Project	$0						
2024	5%	$1,360,000	II	$0	Non-Project	$16,059	$51,941	$13,538,375	Funded	$0
			III	$0					Unmet	$0
			IV	$607,819	Project	$0				
			V	$672,486						
			Total	$1,280,305						
			Project	$0						

Summary

Functional Class	Rehabilitation	Prev. Maint.	Funded Stop Gap	Unmet Stop Gap
Arterial	$3,957,879	$14,596	$0	$16,451
Collector	$266,128	$81,777	$0	$15,290
Other	$1,465,662	$76,146	$0	$10,337
Residential/Local	$710,753	$94,691	$0	$23,664
Grand Total:	$6,400,422	$267,210	$0	$65,741

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year	Budget	PM	Year	Budget	PM	Year	Budget	PM
2020	$1,360,000	5%	2022	$1,360,000	5%	2024	$1,360,000	5%
2021	$1,360,000	5%	2023	$1,360,000	5%			

Year: 2020

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
KAINS AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	KAINS	70	574	30	17,220	R	AC	4	57	57	69	$38,267	7,067	CAPE SEAL
												Treatment Total		$38,267		
TALBOT AVE.	MARIN AVE.	DARTMOUTH ST.	TALBOT	60	1,042	30	31,260	O	AC	8	40	40	100	$184,087	14,731	MILL AND THICK HMA OVERLAY (2.5")
												Treatment Total		$184,087		
CURTIS ST.	MARIN AVE	SONOMA AVE	CURTIS	50	405	31	12,555	O	AC	12	60	60	100	$54,405	16,455	MILL AND THIN HMA OVERLAY (1.5")
SONOMA ST.	PERALTA AVE.	CITY LIMIT (BERKELEY)	SONOMA	20	874	36	31,464	O	AC	8	61	61	100	$136,344	16,133	MILL AND THIN HMA OVERLAY (1.5")
												Treatment Total		$190,749		
BUCHANAN ST EB	PIERCE ST.	JACKSON ST.	BUCHAN	40	1,260	27	34,020	A	AC/AC	12	64	64	100	$173,880	18,408	MILL AND THIN HMA OVERLAY (2")
MARIN AVE.	PERALTA AVE.	CITY LIMIT (BERKELEY)	MARIN	60	930	60	55,800	A	AC	8	67	67	100	$217,000	23,800	MILL AND THIN HMA OVERLAY (2")
MASONIC AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	MASONI	70	670	38	25,460	C	AC	8	63	63	100	$121,643	16,139	MILL AND THIN HMA OVERLAY (2")
SOLANO AVE.	SAN PABLO AV	MASONIC AVE.	SOLANO	30	1,510	57	86,070	A	AC	12	69	69	100	$334,717	22,727	MILL AND THIN HMA OVERLAY (2")
												Treatment Total		$847,240		
ALBANY TERR	NIELSEN ST.	TEVLIN ST.	ALBANY	10	230	21	4,830	R	AC	8	77	78	86	$1,396	67,023	SLURRY SEAL
CURTIS ST.	FRANCIS ST.	CITY LIMIT (BERKELEY)	CURTIS	70	596	30	17,880	R	AC	8	64	65	74	$5,166	67,701	SLURRY SEAL
FRANCIS ST.	SANTA FE AVE.	NIELSEN ST.	FRANCI	10	475	27	12,825	O	AC	8	78	79	86	$3,705	66,256	SLURRY SEAL
FRANCIS ST.	NIELSEN ST.	PERALTA AVE.	FRANCI	20	393	27	10,611	O	AC	8	75	76	84	$3,066	67,460	SLURRY SEAL
JACKSON ST.	MONROE ST	CITY LIMIT (BERKELEY)	JACKSO	50	350	51	17,850	O	AC	12	66	67	76	$7,934	46,003	SLURRY SEAL
KAINS AVE.	GARFIELD AVE.	PORTLAND AVE.	KAINS	20	589	26	15,314	O	AC	8	60	61	71	$6,807	42,508	SLURRY SEAL
KAINS AVE.	PORTLAND AVE.	WASHINGTON AVE.	KAINS	30	589	27	15,903	O	AC	8	74	75	83	$4,595	67,340	SLURRY SEAL
NEILSON ST.	FRANCIS ST. (N)	CITY LIMIT (BERKELEY)	NEILSE	40	600	21	12,600	R	AC	8	71	71	80	$3,640	84,157	SLURRY SEAL
OCEAN VIEW BIKE PATH	SAN PABLO AVE	JACKSON ST	OCEAN	10	875	11	9,625	O	AC		83	84	90	$2,781	57,595	SLURRY SEAL
OCEAN VIEW BIKE PATH	70' W/O JACKSON ST	USDA ENTRANCE	OCEAN	20	625	8	5,000	O	AC		77	77	85	$1,445	102,945	SLURRY SEAL
OCEAN VIEW BIKE PATH	USDA ENTRANCE	BUCHANAN ST	OCEAN	30	500	11	5,500	O	AC		81	82	89	$1,589	62,374	SLURRY SEAL

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2020

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
ORDWAY ST.	SOLANO AVE.	MARIN AVE.	ORDWAY	10	594	36	21,384	R	AC	8	71	71	80	$6,178	87,783	SLURRY SEAL
PERALTA AVE.	MARIN AVE.	SONOMA ST.	PERALT	20	750	37	27,750	C	AC/AC	8	88	88	94	$8,017	131,014	SLURRY SEAL
POLK ST.	SOLANO AVE.	BUCHANAN ST.	POLKS	20	647	30	19,410	R	AC	8	63	64	74	$5,608	73,620	SLURRY SEAL
POMONA AVE.	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	POMONA	10	495	28	13,860	R	AC	12	75	76	84	$4,004	67,424	SLURRY SEAL
POMONA AVE.	PORTLAND AVE.	WASHINGTON AVE. (S)	POMONA	20	723	28	20,244	O	AC	12	68	68	77	$8,998	52,650	SLURRY SEAL
PORTLAND AVE.	MASONIC AVE.	KEY ROUTE BLVD. SB	PORTLA	20B	542	36	19,512	C	AC	8	81	81	89	$5,637	70,629	SLURRY SEAL
STANNAGE AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	STANNA	70	558	26	14,508	R	AC	8	77	78	86	$4,192	67,028	SLURRY SEAL
TEVLIN ST.	FRANCIS ST.	END	TEVLIN	10	421	21	8,841	R	AC	8	76	76	84	$2,555	71,356	SLURRY SEAL
THOUSAND OAKS BLVD.	CARMEL AVE	SANTA FE AVE	THOUSA	21	510	33	16,830	C	AC	12	77	77	85	$4,862	67,592	SLURRY SEAL
THOUSAND OAKS BLVD.	SANTA FE AVE	CITY LIMIT (BERKELEY)	THOUSA	22	400	37	14,800	C	AC	12	77	77	85	$4,276	67,592	SLURRY SEAL
VISALIA	CURTIS ST.	CITY LIMIT (BERKELEY)	VISALI	10	108	26	2,808	R	AC	4	77	77	85	$812	108,308	SLURRY SEAL
												Treatment Total		$97,263		
CARMEL AVE.	PORTLAND AVE.	WASHINGTON AVE.	CARMEL	20	661	30	19,830	R	AC	12	69	70	72	$97	1,243,049	SEAL CRACKS
CERRITO ST.	HILLSIDE AVE.	WASHINGTON AVE.	CERRIT	10	461	23	10,603	R	AC/AC	4	86	86	87	$12	4,607,295	SEAL CRACKS
CORNELL AVE.	MARIN AVE.	DARTMOUTH ST.	CORNEL	70	1,042	26	27,092	R	AC	4	65	65	68	$147	1,066,083	SEAL CRACKS
CORNELL AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	CORNEL	80	494	26	12,844	R	AC	8	66	66	69	$70	1,247,145	SEAL CRACKS
JOHNSON ST.	CLEVELAND AVE.	PIERCE ST.	JOHNSO	10	429	30	12,870	R	AC/AC	8	82	82	83	$33	2,211,635	SEAL CRACKS
KEY ROUTE BLVD.	MARIN AVE.	DARTMOUTH ST.	KEYRO	40	1,045	26	27,170	R	AC	8	68	69	71	$137	1,198,221	SEAL CRACKS
MASONIC AVE.	MARIN AVE.	DARTMOUTH ST.	MASONI	60	1,042	38	39,596	C	AC	8	80	80	82	$120	1,948,618	SEAL CRACKS
POMONA AVE.	SOLANO AVE.	MARIN AVE.	POMONA	40	915	32	29,280	O	AC/AC	8	85	85	86	$45	3,381,641	SEAL CRACKS
POMONA AVE.	MARIN AVE.	SANTA FE AVE.	POMONA	50	1,245	32	39,840	O	AC	4	78	79	80	$133	1,708,812	SEAL CRACKS
PORTLAND AVE.	KEY ROUTE BLVD. SB	CARMEL AVE.	PORTLA	30	771	42	32,382	C	AC	12	75	75	77	$129	1,511,227	SEAL CRACKS
SANTA FE AVE.	SOLANO AVE.	MARIN AVE.	SANTA	40	753	37	27,861	C	AC/AC	12	73	74	76	$118	2,068,383	SEAL CRACKS
SONOMA ST.	CURTIS ST.	PERALTA AVE.	SONOMA	10	602	36	21,672	O	AC	8	76	76	78	$84	2,053,743	SEAL CRACKS
												Treatment Total		$1,125		
							Year 2020 Area Total			902,774		Year 2020 Total		$1,358,731		

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
RAMONA AVE.	SOLANO AVE.	MARIN AVE.	ROMONA	40	863	33	28,479	O	AC	12	43	40	100	$167,710	14,685	MILL AND THICK HMA OVERLAY (2.5")
RAMONA AVE.	MARIN AVE.	SANTA FE AVE.	ROMONA	50	808	32	25,856	O	AC	8	42	40	100	$152,264	14,738	MILL AND THICK HMA OVERLAY (2.5")
												Treatment Total		$319,974		
BUCHANAN AVE	CLEVELAND AVE (W)	CLEVELAND AVE (E)	BUCHAN	10	160	25	4,000	A	AC		26	22	100	$48,000	8,997	RECONSTRUCT SURFACE (HMA, 8")
												Treatment Total		$48,000		
MARIN AVE.	SANTA FE AVE.	PERALTA AVE.	MARIN	50	1,032	63	65,016	A	AC	8	52	49	100	$520,128	14,799	MILL AND THICK HMA OVERLAY (4")
												Treatment Total		$520,128		
BUCHANAN ST WB	PIERCE ST	MADISON ST	BUCHAN	50B	1,500	13	19,500	A	AC	12	71	69	100	$75,834	25,038	MILL AND THIN HMA OVERLAY (2")
MARIN AVE. (EXTENSION)	JACKSON ST.	SAN PABLO AVE.	MARIN	10	875	56	49,000	A	AC	12	70	68	100	$250,445	17,831	MILL AND THIN HMA OVERLAY (2")
PIERCE ST.	SOLANO AVE.	BUCHANAN ST.	PIERCE	50	513	30	15,390	A	AC/AC	8	70	68	100	$59,850	22,831	MILL AND THIN HMA OVERLAY (2")
												Treatment Total		$386,129		
PERALTA AVE.	SOLANO AVE	MARIN AVE.	PERALT	10	500	36	18,000	C	AC/AC	12	88	86	92	$5,200	59,148	SLURRY SEAL
SANTA FE AVE.	WASHINGTON AVE.	SOLANO AVE.	SANTA	30	721	37	26,677	C	AC/AC	8	88	86	92	$7,707	59,114	SLURRY SEAL
SANTA FE AVE.	SOLANO AVE.	MARIN AVE.	SANTA	40	753	37	27,861	C	AC/AC	12	73	75	84	$8,049	88,695	SLURRY SEAL
SPOKANE AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	SPOKAN	10	1,286	26	33,436	O	AC	8	87	86	92	$9,660	50,306	SLURRY SEAL
SPOKANE AVE.	PORTLAND AVE.	WASHINGTON AVE.	SPOKAN	20	623	26	16,198	R	AC	8	88	87	93	$4,680	46,641	SLURRY SEAL
TEVLIN ST.	TERRACE ST.	N END	TEVLIN	20	568	19	10,792	R	AC	8	88	87	93	$3,118	46,664	SLURRY SEAL
												Treatment Total		$38,414		
CARMEL AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	CARMEL	10	981	30	29,430	O	AC	12	88	87	88	$55	2,158,398	SEAL CRACKS
CURTIS ST.	CITY LIMIT (KENSINGTON)	PORTLAND AVE.	CURTIS	10	1,318	28	36,904	O	AC	8	88	87	88	$69	2,159,107	SEAL CRACKS
CURTIS ST.	PORTLAND AVE.	WASHINGTON AVE.	CURTIS	20	661	26	17,186	R	AC	8	88	87	88	$32	2,159,107	SEAL CRACKS
CURTIS ST.	WASHINGTON AVE.	SOLANO AVE.	CURTIS	30	684	26	17,784	R	AC	8	88	87	88	$34	2,159,107	SEAL CRACKS
EVELYN AVE.	NORTH END	BRIGHTON AVE	EVELYN	10	462	30	13,860	R	AC/AC	8	89	88	89	$3	30,965,303	SEAL CRACKS
EVELYN AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	EVELYN	70	620	30	18,600	R	AC/AC	4	89	88	89	$4	29,614,447	SEAL CRACKS
GARFIELD AVE.	CORNELL AVE.	MASONIC AVE.	GARFIE	20	736	32	23,552	R	AC	8	71	69	72	$116	1,543,293	SEAL CRACKS
KAINS AVE.	SOLANO AVE.	MARIN AVE.	KAINS	50	1,235	28	34,580	O	AC	8	88	87	88	$65	2,158,229	SEAL CRACKS
MADISON ST.	NORTH END	CLAY ST.	MADISO	10	404	27	10,908	R	AC/AC	8	88	86	87	$10	6,992,903	SEAL CRACKS

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2021

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
MADISON ST.	CLAY ST.	CASTRO. ST.	MADISO	20	668	30	20,040	R	AC	8	87	86	87	$41	2,116,529	SEAL CRACKS
MADISON ST.	CASTRO. ST.	WASHINGTON AVE.	MADISO	30	668	29	19,372	R	AC	4	87	86	87	$39	2,116,529	SEAL CRACKS
MADISON ST.	WASHINGTON AVE.	SOLANO AVE.	MADISO	40	718	30	21,540	R	AC	8	87	86	87	$44	2,122,000	SEAL CRACKS
MADISON ST.	SOLANO AVE.	BUCHANAN ST.	MADISO	50	793	30	23,790	R	AC	8	89	87	88	$41	2,200,156	SEAL CRACKS
NEILSON ST.	MARIN AVE.	SONOMA ST.	NEILSE	20	610	32	19,520	R	AC/AC	8	89	88	89	$4	30,686,479	SEAL CRACKS
PIERCE ST.	CITY LIMIT (EL CERRITO)	404' S/O CITY LIMIT	PIERCE	10	404	37	14,948	A	AC	8	76	74	76	$62	1,618,329	SEAL CRACKS
PIERCE ST.	404' S/O CITY LIMIT	1946' S/O CITY LIMIT	PIERCE	20	1,542	37	57,054	A	AC	8	78	76	79	$213	1,843,672	SEAL CRACKS
POMONA AVE.	WASHINGTON AVE. (S)	SOLANO AVE.	POMONA	30	752	28	21,056	O	AC	8	73	72	75	$95	1,089,795	SEAL CRACKS
RAMONA AVE.	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	ROMONA	10	362	28	10,136	O	AC	12	88	87	88	$19	2,158,398	SEAL CRACKS
RAMONA AVE.	PORTLAND AVE.	WASHINGTON AVE.	ROMONA	20	661	30	19,830	O	AC	12	88	87	88	$37	2,158,398	SEAL CRACKS
SAN CARLOS AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	SANCA	10	979	30	29,370	R	AC	12	88	87	88	$55	2,159,369	SEAL CRACKS
SAN CARLOS AVE.	PORTLAND AVE.	WASHINGTON AVE.	SANCA	20	664	30	19,920	R	AC	12	88	87	88	$37	2,159,452	SEAL CRACKS
STANNAGE AVE.	NORTH END	GARFIELD AVE.	STANNA	10	966	30	28,980	R	AC	4	63	62	65	$169	957,095	SEAL CRACKS
STANNAGE AVE.	GARFIELD AVE.	PORTLAND AVE.	STANNA	20	591	30	17,730	R	AC	8	73	72	74	$80	1,355,971	SEAL CRACKS
STANNAGE AVE.	PORTLAND AVE.	WASHINGTON AVE.	STANNA	30	586	30	17,580	R	AC	8	72	71	73	$84	1,655,380	SEAL CRACKS
STANNAGE AVE.	SOLANO AVE.	MARIN AVE.	STANNA	50	1,189	26	30,914	R	AC	12	67	65	68	$169	1,269,267	SEAL CRACKS
TALBOT AVE.	SOLANO AVE.	MARIN AVE.	TALBOT	50	1,093	30	32,790	O	AC	12	88	87	88	$61	2,158,229	SEAL CRACKS
TAYLOR ST.	SOLANO AVE.	BUCHANAN ST.	TAYLOR	10	614	30	18,420	R	AC	8	75	74	76	$77	1,460,241	SEAL CRACKS
WEST PL.	POSEN AVE.	END	WESTP	10	207	21	4,347	R	AC/AC	4	89	88	89	$1	30,686,479	SEAL CRACKS
													Treatment Total	$1,716		
							Year 2021 Area Total			970,346			Year 2021 Total	$1,314,361		

Year: 2022

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
ADAMS ST.	BUCHANAN ST.	SOLANO AVE	ADAMS	10	845	26	21,970	O	AC	8	46	42	100	$129,379	14,560	MILL AND THICK HMA OVERLAY (2.5")
DARTMOUTH ST.	SAN PABLO AV	TALBOT AVE.	DARTMO	10	1,000	30	30,000	O	AC	8	45	41	100	$176,667	14,640	MILL AND THICK HMA OVERLAY (2.5")
													Treatment Total	$306,046		
CLEVELAND AVE.	JOHNSON ST.	BUCHANAN ST.	CLEVEL	50	188	34	6,392	A	AC	12	18	9	100	$76,704	8,997	RECONSTRUCT SURFACE (HMA, 8")

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

											Treatment Total			$76,704		
MARIN AVE.	MASONIC AVE.	SANTA FE AVE.	MARIN	40	1,286	60	77,160	A	AC	8	53	47	100	$617,280	15,007	MILL AND THICK HMA OVERLAY (4")
											Treatment Total			$617,280		
EASTSHORE HWY.	1025 EASTSHORE HWY PAVT CHANGE	BUCHANAN ST(BRIDGE)	EASTSH	20	600	30	18,000	A	AC	8	72	69	100	$70,000	20,905	MILL AND THIN HMA OVERLAY (2")
PIERCE ST.	1946' S/O CITY LIMIT	CALHOUN ST.	PIERCE	30	1,339	30	40,170	A	AC	8	72	69	100	$156,217	21,204	MILL AND THIN HMA OVERLAY (2")
PIERCE ST.	CALHOUN ST.	SOLANO AVE.	PIERCE	40	488	30	14,640	A	AC/AC	8	72	68	100	$56,934	22,467	MILL AND THIN HMA OVERLAY (2")
											Treatment Total			$283,151		
CERRITO ST.	HILLSIDE AVE.	WASHINGTON AVE.	CERRIT	10	461	23	10,603	R	AC/AC	4	86	85	91	$3,064	66,984	SLURRY SEAL
EVELYN AVE.	NORTH END	BRIGHTON AVE	EVELYN	10	462	30	13,860	R	AC/AC	8	89	88	94	$4,004	75,057	SLURRY SEAL
EVELYN AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	EVELYN	70	620	30	18,600	R	AC/AC	4	89	88	94	$5,374	75,019	SLURRY SEAL
JACKSON ST.	SOLANO AVE.	BUCHANAN ST.	JACKSO	40	752	40	30,080	C	AC/AC	12	90	88	94	$8,690	107,152	SLURRY SEAL
JOHNSON ST.	CLEVELAND AVE.	PIERCE ST.	JOHNSO	10	429	30	12,870	R	AC/AC	8	82	81	88	$3,718	69,448	SLURRY SEAL
MASONIC AVE.	MARIN AVE.	DARTMOUTH ST.	MASONI	60	1,042	38	39,596	C	AC	8	80	79	87	$11,439	69,190	SLURRY SEAL
NEILSON ST.	MARIN AVE.	SONOMA ST.	NEILSE	20	610	32	19,520	R	AC/AC	8	89	88	94	$5,640	75,050	SLURRY SEAL
POMONA AVE.	SOLANO AVE.	MARIN AVE.	POMONA	40	915	32	29,280	O	AC/AC	8	85	84	91	$8,459	64,279	SLURRY SEAL
POMONA AVE.	MARIN AVE.	SANTA FE AVE.	POMONA	50	1,245	32	39,840	O	AC	4	78	78	86	$11,510	66,717	SLURRY SEAL
PORTLAND AVE.	CORNELL AVE.	TALBOT AVE.	PORTLA	15	259	36	9,324	C	AC/AC	8	91	87	93	$2,694	59,515	SLURRY SEAL
SONOMA ST.	CURTIS ST.	PERALTA AVE.	SONOMA	10	602	36	21,672	O	AC	8	76	76	85	$6,261	102,198	SLURRY SEAL
TERRACE ST.	NIELSEN ST.	TEVLIN ST.	TERRAC	10	242	27	6,534	R	AC/AC	8	90	88	94	$1,888	87,520	SLURRY SEAL
WEST PL.	POSEN AVE.	END	WESTP	10	207	21	4,347	R	AC/AC	4	89	88	94	$1,256	75,050	SLURRY SEAL
											Treatment Total			$73,997		
MARIN AVE.	SAN PABLO AV	CORNELL AVE	MARIN	20	775	61	47,275	A	AC/AC	8	91	87	88	$29	10,385,386	SEAL CRACKS
SAN GABRIEL AVE.	BRIGHTON AV	PORTLAND AVE.	SANGA	10	1,124	30	33,720	R	AC/AC	8	89	88	88	$12	21,090,210	SEAL CRACKS
TALBOT AVE.	WASHINGTON AVE.	SOLANO AVE.	TALBOT	40	743	30	22,290	O	AC/AC	8	90	88	88	$7	21,647,902	SEAL CRACKS
											Treatment Total			$48		
					Year 2022 Area Total		567,743				Year 2022 Total			$1,357,226		

Year: 2023

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
KAINS AVE.	PARKING LOT	GARFIELD AVE.	KAINS	10	963	26	25,038	O	AC	8	47	41	100	$147,446	14,649	MILL AND THICK HMA OVERLAY (2.5")
KAINS AVE.	MARIN AVE.	DARTMOUTH ST.	KAINS	60	1,042	30	31,260	O	AC	4	50	44	100	$184,087	14,376	MILL AND THICK HMA OVERLAY (2.5")

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

										Treatment Total			$331,533			
SOLANO AVE.	POMONA AVE.	SANTA FE AVE.	SOLANO	40B	935	54	50,490	A	AC/PCC	12	51	42	100	$431,970	14,398	MILL AND THICK RHMA/HMA OVERLAY (4")
										Treatment Total			$431,970			
CLEVELAND AVE.	RAMP ON HWY 80	PVMNT CHG	CLEVEL	20	770	32	24,640	A	AC	12	56	47	100	$197,120	14,979	MILL AND THICK HMA OVERLAY (4")
EASTSHORE HWY.	CITY LIMIT (BERKELEY)	1025 EASTSHORE HWY-PAVT CHANGE	EASTSH	10	1,325	30	39,750	A	AC	4	58	49	100	$318,000	14,733	MILL AND THICK HMA OVERLAY (4")
										Treatment Total			$515,120			
ADAMS ST.	WASHINGTON AVE.	CASTRO ST	ADAMS	30	668	26	17,368	O	AC/AC	4	92	87	93	$5,018	55,479	SLURRY SEAL
ADAMS ST.	CASTRO ST	CLAY ST	ADAMS	40	668	26	17,368	O	AC/AC	4	92	87	93	$5,018	55,479	SLURRY SEAL
ADAMS ST.	CLAY ST	NORTH END	ADAMS	50	575	30	17,250	O	AC	8	92	86	92	$4,984	48,468	SLURRY SEAL
CARMEL AVE.	PORTLAND AVE.	WASHINGTON AVE.	CARMEL	20	661	30	19,830	R	AC	12	69	68	77	$5,729	63,406	SLURRY SEAL
CORNELL AVE.	MARIN AVE.	DARTMOUTH ST.	CORNEL	70	1,042	26	27,092	R	AC	4	65	64	74	$7,827	59,894	SLURRY SEAL
CORNELL AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	CORNEL	80	494	26	12,844	R	AC	8	66	65	75	$3,711	74,335	SLURRY SEAL
KEY ROUTE BLVD.	MARIN AVE.	DARTMOUTH ST.	KEYRO	40	1,045	26	27,170	R	AC	8	68	67	77	$7,850	62,533	SLURRY SEAL
PORTLAND AVE.	TALBOT AVE.	MASONIC AVE.	PORTLA	20A	500	36	18,000	C	AC/AC	8	91	85	91	$5,200	69,606	SLURRY SEAL
PORTLAND AVE.	KEY ROUTE BLVD. SB	CARMEL AVE.	PORTLA	30	771	42	32,382	C	AC	12	75	71	80	$9,355	60,424	SLURRY SEAL
TALBOT AVE.	WASHINGTON AVE.	SOLANO AVE.	TALBOT	40	743	30	22,290	O	AC/AC	8	90	88	94	$6,440	74,005	SLURRY SEAL
										Treatment Total			$61,132			
ALBANY TERR	NIELSEN ST.	TEVLIN ST.	ALBANY	10	230	21	4,830	R	AC	8	77	82	83	$14	1,870,277	SEAL CRACKS
BUCHANAN ST EB	PIERCE ST.	JACKSON ST.	BUCHAN	40	1,260	27	34,020	A	AC/AC	12	64	86	87	$32	4,102,787	SEAL CRACKS
CURTIS ST.	FRANCIS ST.	CITY LIMIT (BERKELEY)	CURTIS	70	596	30	17,880	R	AC	8	64	71	73	$84	1,451,462	SEAL CRACKS
EVELYN AVE.	BRIGHTON AVE	PORTLAND AVE.	EVELYN	20	1,215	27	32,805	R	AC/AC	8	92	88	89	$1	397,824,852	SEAL CRACKS
FRANCIS ST.	SANTA FE AVE.	NIELSEN ST.	FRANCI	10	475	27	12,825	O	AC	8	78	82	84	$34	1,928,309	SEAL CRACKS
FRANCIS ST.	NIELSEN ST.	PERALTA AVE.	FRANCI	20	393	27	10,611	O	AC	8	75	80	82	$33	1,777,584	SEAL CRACKS
JACKSON ST.	MONROE ST	CITY LIMIT (BERKELEY)	JACKSO	50	350	51	17,850	O	AC	12	66	73	75	$79	1,566,361	SEAL CRACKS
KAINS AVE.	PORTLAND AVE.	WASHINGTON AVE.	KAINS	30	589	27	15,903	O	AC	8	74	79	81	$52	1,735,617	SEAL CRACKS
KAINS AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	KAINS	70	574	30	17,220	R	AC	4	57	64	67	$96	1,015,813	SEAL CRACKS
MARIN AVE.	PERALTA AVE.	CITY LIMIT (BERKELEY)	MARIN	60	930	60	55,800	A	AC	8	67	86	87	$52	4,102,787	SEAL CRACKS
MASONIC AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	MASONI	70	670	38	25,460	C	AC	8	63	86	87	$25	2,879,673	SEAL CRACKS

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2023

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
NEILSON ST.	FRANCIS ST. (N)	CITY LIMIT (BERKELEY)	NEILSE	40	600	21	12,600	R	AC	8	71	77	79	$47	2,014,901	SEAL CRACKS
OCEAN VIEW BIKE PATH	SAN PABLO AVE	JACKSON ST	OCEAN	10	875	11	9,625	O	AC		83	86	87	$20	2,136,232	SEAL CRACKS
OCEAN VIEW BIKE PATH	70' W/O JACKSON ST	USDA ENTRANCE	OCEAN	20	625	8	5,000	O	AC		77	83	84	$13	2,798,373	SEAL CRACKS
OCEAN VIEW BIKE PATH	USDA ENTRANCE	BUCHANAN ST	OCEAN	30	500	11	5,500	O	AC		81	85	86	$13	2,062,324	SEAL CRACKS
ORDWAY ST.	SOLANO AVE.	MARIN AVE.	ORDWAY	10	594	36	21,384	R	AC	8	71	77	79	$78	2,120,374	SEAL CRACKS
POLK ST.	SOLANO AVE.	BUCHANAN ST.	POLKS	20	647	30	19,410	R	AC	8	63	70	73	$93	1,575,236	SEAL CRACKS
POMONA AVE.	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	POMONA	10	495	28	13,860	R	AC	12	75	80	82	$43	1,773,941	SEAL CRACKS
POMONA AVE.	PORTLAND AVE.	WASHINGTON AVE. (S)	POMONA	20	723	28	20,244	O	AC	12	68	74	76	$84	1,851,175	SEAL CRACKS
PORTLAND AVE.	MASONIC AVE.	KEY ROUTE BLVD. SB	PORTLA	20B	542	36	19,512	C	AC	8	81	84	85	$47	2,308,942	SEAL CRACKS
SOLANO AVE.	SAN PABLO AV	MASONIC AVE.	SOLANO	30	1,510	57	86,070	A	AC	12	69	86	87	$80	4,102,787	SEAL CRACKS
STANNAGE AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	STANNA	70	558	26	14,508	R	AC	8	77	82	83	$41	1,869,731	SEAL CRACKS
TEVLIN ST.	FRANCIS ST.	END	TEVLIN	10	421	21	8,841	R	AC	8	76	80	82	$28	1,437,444	SEAL CRACKS
THOUSAND OAKS BLVD.	CARMEL AVE	SANTA FE AVE	THOUSA	21	510	33	16,830	C	AC	12	77	80	82	$52	1,926,339	SEAL CRACKS
THOUSAND OAKS BLVD.	SANTA FE AVE	CITY LIMIT (BERKELEY)	THOUSA	22	400	37	14,800	C	AC	12	77	80	82	$46	1,926,339	SEAL CRACKS
VISALIA	CURTIS ST.	CITY LIMIT (BERKELEY)	VISALI	10	108	26	2,808	R	AC	4	77	83	84	$8	2,940,928	SEAL CRACKS
												Treatment Total		$1,195		
					Year 2023 Area Total		898,968					Year 2023 Total		$1,340,950		

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
TALBOT AVE.	DARTMOUTH ST.	CITY LIMIT (BERKELEY)	TALBOT	70	620	30	18,600	O	AC	8	52	43	100	$109,534	14,469	MILL AND THICK HMA OVERLAY (2.5")
												Treatment Total		$109,534		
MASONIC AVE.	BRIGHTON AVE.	GARFIELD AVE.	MASONI	10	590	38	22,420	C	AC	12	63	49	100	$144,485	13,536	MILL AND THICK HMA OVERLAY (3")
												Treatment Total		$144,485		
MARIN AVE.	CORNELL AVE	MASONIC AVE	MARIN	30	725	61	44,225	A	AC		59	48	100	$353,800	14,934	MILL AND THICK HMA OVERLAY (4")
												Treatment Total		$353,800		

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
BEVERLY PL.	VENTURA AVE.	CITY LIMIT (BERKELEY)	BEVERL	10	358	37	13,246	R	AC	8	36	23	100	$89,779	11,735	RECONSTRUCT (3" HMA AND 9" FDR)
CARMEL AVE.	WASHINGTON AVE.	SOLANO AVE.	CARMEL	30	762	30	22,860	R	AC	8	32	20	100	$154,940	11,735	RECONSTRUCT (3" HMA AND 9" FDR)
CARMEL AVE.	SOLANO AVE.	MARIN AVE.	CARMEL	40	823	33	27,159	R	AC	12	10	0	100	$184,078	11,735	RECONSTRUCT (3" HMA AND 9" FDR)
CERRITO ST.	WASHINGTON AVE.	SOLANO AVE.	CERRIT	20	688	30	20,640	R	AC	4	32	19	100	$139,894	11,735	RECONSTRUCT (3" HMA AND 9" FDR)
CORNELL AVE.	GARFIELD AVE.	PORTLAND AVE.	CORNEL	30	589	26	15,314	R	AC	8	26	13	100	$103,795	11,735	RECONSTRUCT (3" HMA AND 9" FDR)
											Treatment Total			$672,486		
MARIN AVE.	SAN PABLO AV	CORNELL AVE	MARIN	20	775	61	47,275	A	AC/AC	8	91	85	92	$13,658	85,502	SLURRY SEAL
											Treatment Total			$13,658		
BUCHANAN AVE	CLEVELAND AVE (W)	CLEVELAND AVE (E)	BUCHAN	10	160	25	4,000	A	AC		26	86	87	$8	1,565,463	SEAL CRACKS
BUCHANAN ST WB	PIERCE ST	MADISON ST	BUCHAN	50B	1,500	13	19,500	A	AC	12	71	86	87	$19	4,102,787	SEAL CRACKS
CARMEL AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	CARMEL	10	981	30	29,430	O	AC	12	88	83	85	$72	1,974,643	SEAL CRACKS
CURTIS ST.	CITY LIMIT (KENSINGTON)	PORTLAND AVE.	CURTIS	10	1,318	28	36,904	O	AC	8	88	83	85	$90	1,975,124	SEAL CRACKS
CURTIS ST.	PORTLAND AVE.	WASHINGTON AVE.	CURTIS	20	661	26	17,186	R	AC	8	88	83	85	$42	1,975,124	SEAL CRACKS
CURTIS ST.	WASHINGTON AVE.	SOLANO AVE.	CURTIS	30	684	26	17,784	R	AC	8	88	83	85	$44	1,975,124	SEAL CRACKS
CURTIS ST.	MARIN AVE	SONOMA AVE	CURTIS	50	405	31	12,555	O	AC	12	60	87	88	$9	3,372,449	SEAL CRACKS
GARFIELD AVE.	CORNELL AVE.	MASONIC AVE.	GARFIE	20	736	32	23,552	R	AC	8	71	69	72	$117	1,515,882	SEAL CRACKS
KAINS AVE.	SOLANO AVE.	MARIN AVE.	KAINS	50	1,235	28	34,580	O	AC	8	88	83	85	$85	1,974,521	SEAL CRACKS
MADISON ST.	NORTH END	CLAY ST.	MADISO	10	404	27	10,908	R	AC/AC	8	88	84	86	$18	4,111,854	SEAL CRACKS
MADISON ST.	CLAY ST.	CASTRO. ST.	MADISO	20	668	30	20,040	R	AC	8	87	83	84	$52	1,945,110	SEAL CRACKS
MADISON ST.	CASTRO. ST.	WASHINGTON AVE.	MADISO	30	668	29	19,372	R	AC	4	87	83	84	$50	1,945,110	SEAL CRACKS
MADISON ST.	WASHINGTON AVE.	SOLANO AVE.	MADISO	40	718	30	21,540	R	AC	8	87	83	84	$56	1,949,321	SEAL CRACKS
MADISON ST.	SOLANO AVE.	BUCHANAN ST.	MADISO	50	793	30	23,790	R	AC	8	89	84	85	$56	2,025,425	SEAL CRACKS
MARIN AVE. (EXTENSION)	JACKSON ST.	SAN PABLO AVE.	MARIN	10	875	56	49,000	A	AC	12	70	86	87	$46	4,102,787	SEAL CRACKS
MARIN AVE.	SANTA FE AVE.	PERALTA AVE.	MARIN	50	1,032	63	65,016	A	AC	8	52	86	87	$61	4,102,787	SEAL CRACKS
PERALTA AVE.	SOLANO AVE	MARIN AVE.	PERALT	10	500	36	18,000	C	AC/AC	12	88	87	88	$13	9,255,035	SEAL CRACKS
PIERCE ST.	CITY LIMIT (EL CERRITO)	404' S/O CITY LIMIT	PIERCE	10	404	37	14,948	A	AC	8	76	70	73	$72	1,420,930	SEAL CRACKS
PIERCE ST.	404' S/O CITY LIMIT	1946' S/O CITY LIMIT	PIERCE	20	1,542	37	57,054	A	AC	8	78	73	75	$249	1,657,912	SEAL CRACKS
PIERCE ST.	SOLANO AVE.	BUCHANAN ST.	PIERCE	50	513	30	15,390	A	AC/AC	8	70	86	87	$15	4,102,787	SEAL CRACKS

** - Treatment from Project Selection

Scenarios Criteria:

Scenarios - Sections Selected for Treatment

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Budget $1.36M/Year

Year: 2024

Street Name	Begin Location	End Location	Street ID	Section ID	Length	Width	Area	FC	Surf Type	Area ID	Current PCI	Treatment PCI Before	Treatment PCI After	Cost	Rating	Treatment
POMONA AVE.	WASHINGTON AVE. (S)	SOLANO AVE.	POMONA	30	752	28	21,056	O	AC	8	73	70	73	$102	1,011,664	SEAL CRACKS
RAMONA AVE.	CITY LIMIT (EL CERRITO)	THOUSAND OAKS BLVD.	ROMONA	10	362	28	10,136	O	AC	12	88	83	85	$25	1,974,643	SEAL CRACKS
RAMONA AVE.	PORTLAND AVE.	WASHINGTON AVE.	ROMONA	20	661	30	19,830	O	AC	12	88	83	85	$49	1,974,643	SEAL CRACKS
SAN CARLOS AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	SANCA	10	979	30	29,370	R	AC	12	88	83	85	$72	1,975,303	SEAL CRACKS
SAN CARLOS AVE.	PORTLAND AVE.	WASHINGTON AVE.	SANCA	20	664	30	19,920	R	AC	12	88	83	85	$49	1,975,355	SEAL CRACKS
SANTA FE AVE.	WASHINGTON AVE.	SOLANO AVE.	SANTA	30	721	37	26,677	C	AC/AC	8	88	87	88	$18	9,264,485	SEAL CRACKS
SANTA FE AVE.	SOLANO AVE.	MARIN AVE.	SANTA	40	753	37	27,861	C	AC/AC	12	73	80	82	$83	2,718,954	SEAL CRACKS
SONOMA ST.	PERALTA AVE.	CITY LIMIT (BERKELEY)	SONOMA	20	874	36	31,464	O	AC	8	61	87	88	$22	3,372,449	SEAL CRACKS
SPOKANE AVE.	CITY LIMIT (EL CERRITO)	PORTLAND AVE.	SPOKAN	10	1,286	26	33,436	O	AC	8	87	87	88	$61	2,174,685	SEAL CRACKS
SPOKANE AVE.	PORTLAND AVE.	WASHINGTON AVE.	SPOKAN	20	623	26	16,198	R	AC	8	88	87	88	$29	2,195,057	SEAL CRACKS
STANNAGE AVE.	NORTH END	GARFIELD AVE.	STANNA	10	966	30	28,980	R	AC	4	63	61	64	$172	908,702	SEAL CRACKS
STANNAGE AVE.	GARFIELD AVE.	PORTLAND AVE.	STANNA	20	591	30	17,730	R	AC	8	73	70	73	$85	1,280,484	SEAL CRACKS
STANNAGE AVE.	PORTLAND AVE.	WASHINGTON AVE.	STANNA	30	586	30	17,580	R	AC	8	72	70	73	$85	1,628,303	SEAL CRACKS
STANNAGE AVE.	SOLANO AVE.	MARIN AVE.	STANNA	50	1,189	26	30,914	R	AC	12	67	65	68	$171	1,242,214	SEAL CRACKS
TALBOT AVE.	SOLANO AVE.	MARIN AVE.	TALBOT	50	1,093	30	32,790	O	AC	12	88	83	85	$80	1,974,521	SEAL CRACKS
TALBOT AVE.	MARIN AVE.	DARTMOUTH ST.	TALBOT	60	1,042	30	31,260	O	AC	8	40	87	88	$22	3,372,449	SEAL CRACKS
TAYLOR ST.	SOLANO AVE.	BUCHANAN ST.	TAYLOR	10	614	30	18,420	R	AC	8	75	72	75	$83	1,374,727	SEAL CRACKS
TEVLIN ST.	TERRACE ST.	N END	TEVLIN	20	568	19	10,792	R	AC	8	88	87	88	$19	2,194,945	SEAL CRACKS

		Treatment Total	$2,401
Year 2024 Area Total	1,166,702	Year 2024 Total	$1,296,364
Total Section Area:	4,506,533	Grand Total	$6,667,632

CITY OF ALBANY

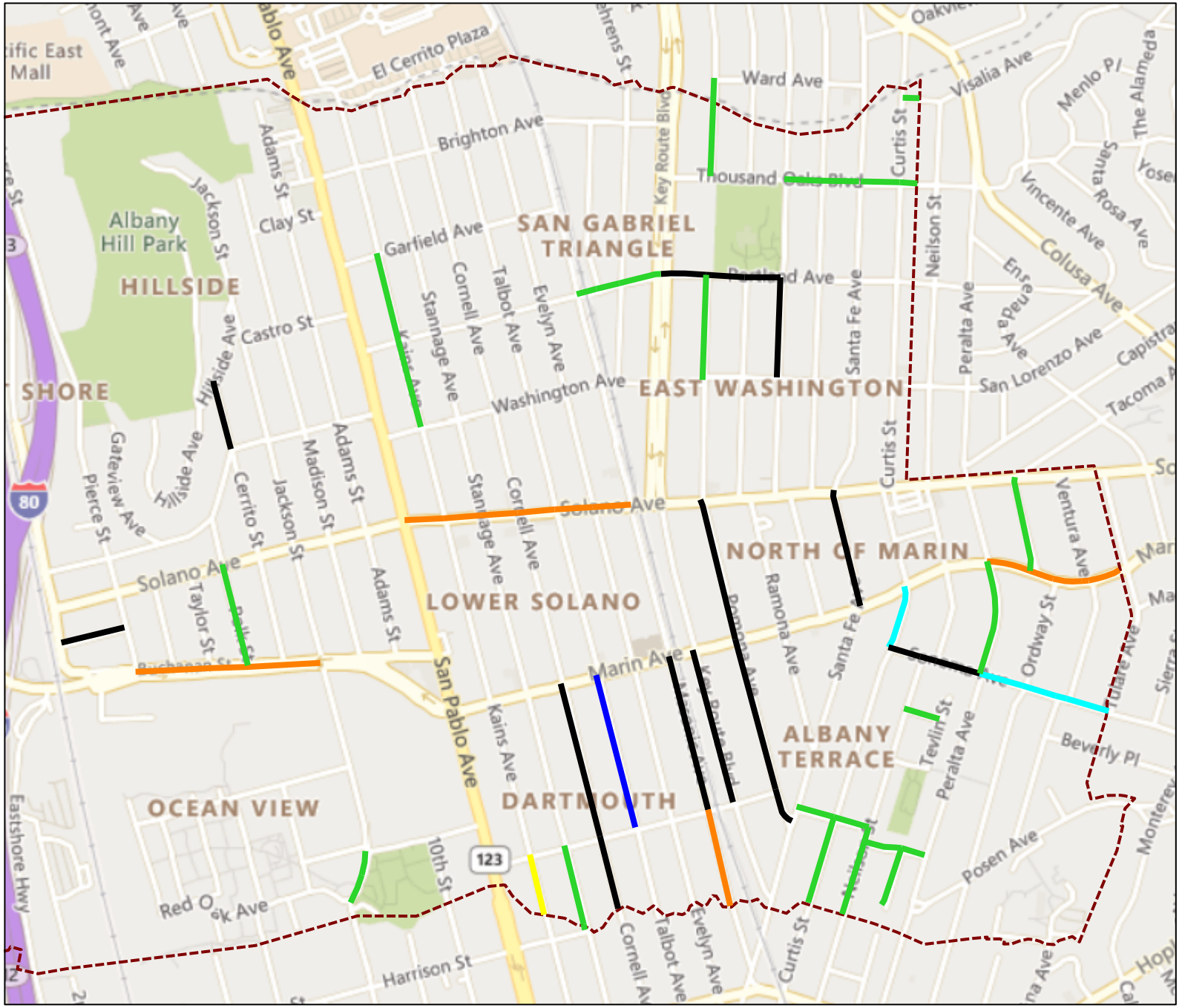
Scenario Treatments

Budget $1.36M/Year - 2020 Project Period - Printed: 2/4/2020

Feature Legend

- CAPE SEAL
- MILL AND THICK HMA OVERLAY (2.5")
- MILL AND THIN HMA OVERLAY (1.5")
- MILL AND THIN HMA OVERLAY (2")
- SEAL CRACKS
- SLURRY SEAL

0 0.1 0.2 0.3 0.4 Miles



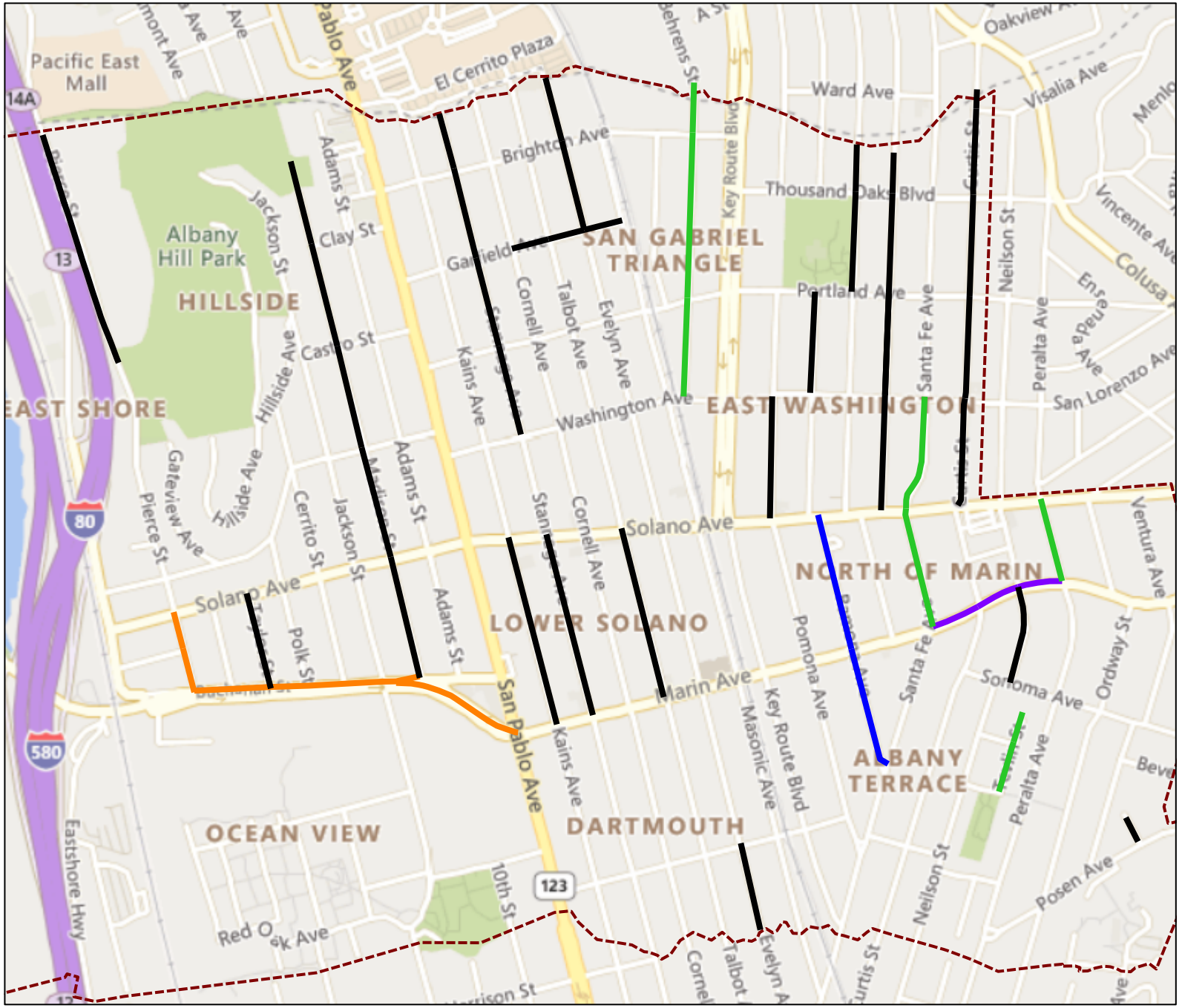
CITY OF ALBANY

Scenario Treatments

Budget $1.36M/Year - 2021 Project Period - Printed: 2/4/2020

Feature Legend

- MILL AND THICK HMA OVERLAY (2.5")
- MILL AND THICK HMA OVERLAY (4")
- MILL AND THIN HMA OVERLAY (2")
- SEAL CRACKS
- SLURRY SEAL



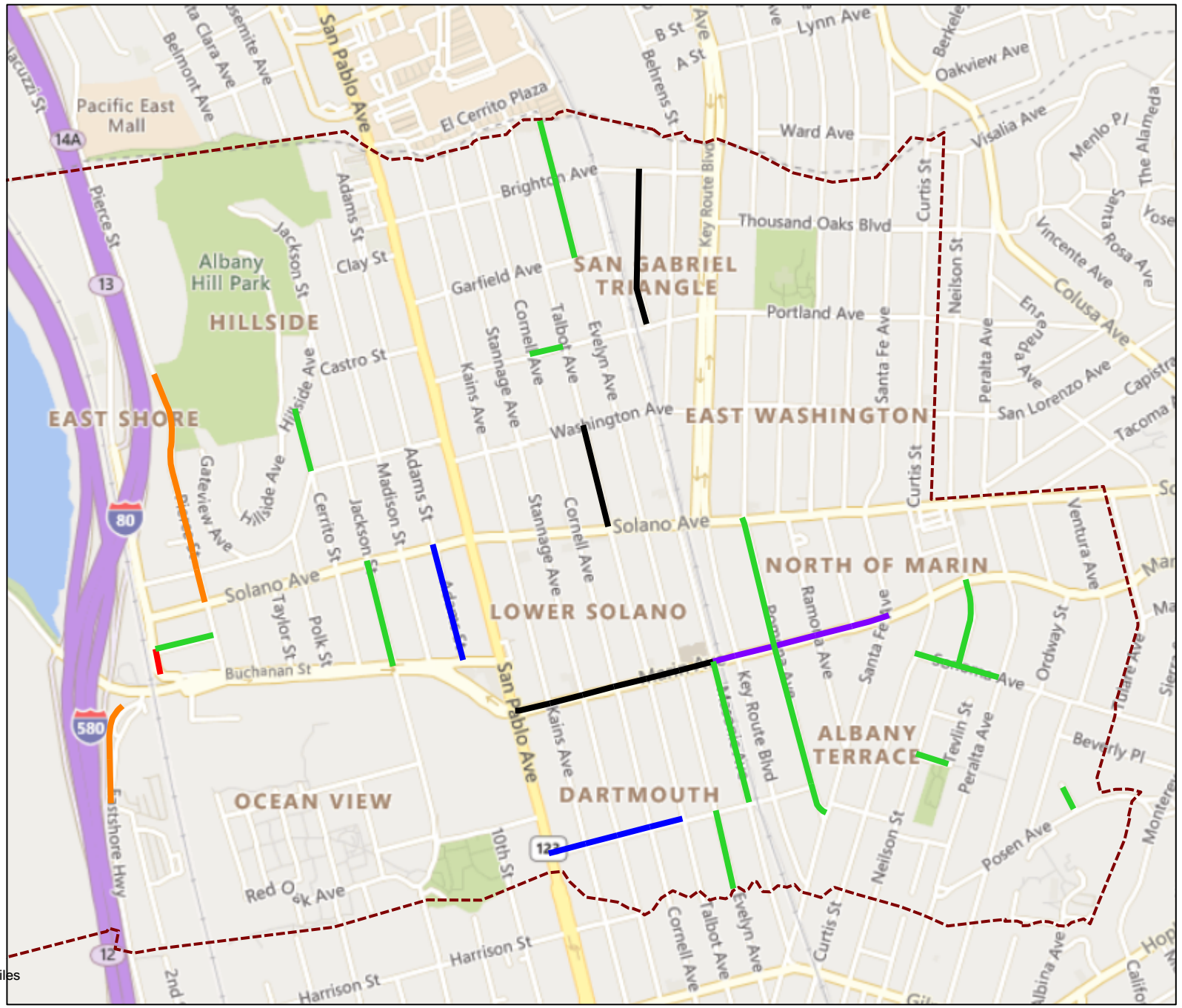
CITY OF ALBANY

Scenario Treatments

Budget $1.36M/Year - 2022 Project Period - Printed: 2/4/2020

Feature Legend

- MILL AND THICK HMA OVERLAY (2.5")
- MILL AND THICK HMA OVERLAY (4")
- MILL AND THIN HMA OVERLAY (2")
- RECONSTRUCT SURFACE (HMA, 8")
- SEAL CRACKS
- SLURRY SEAL



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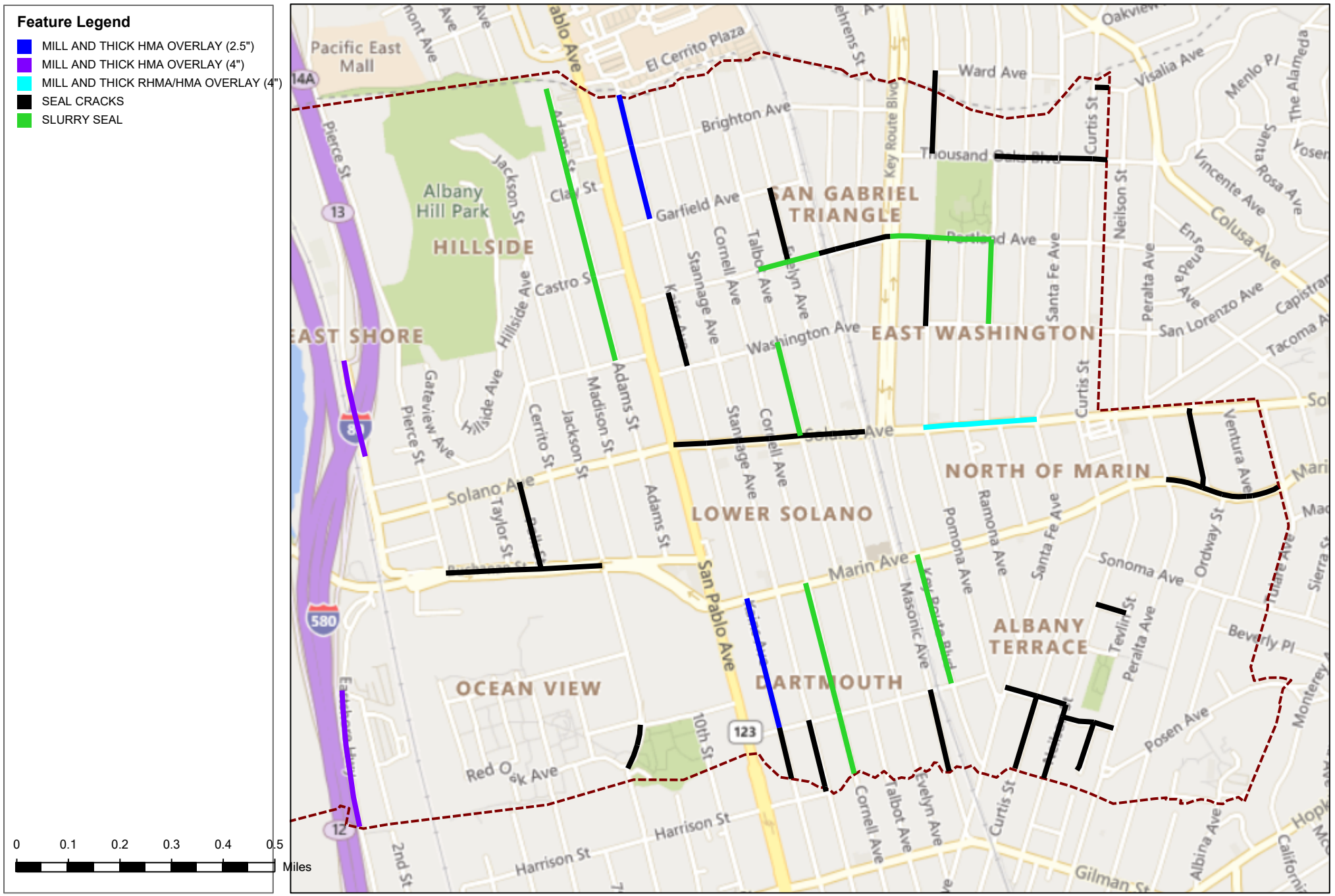
CITY OF ALBANY

Scenario Treatments

Budget $1.36M/Year - 2023 Project Period - Printed: 2/4/2020



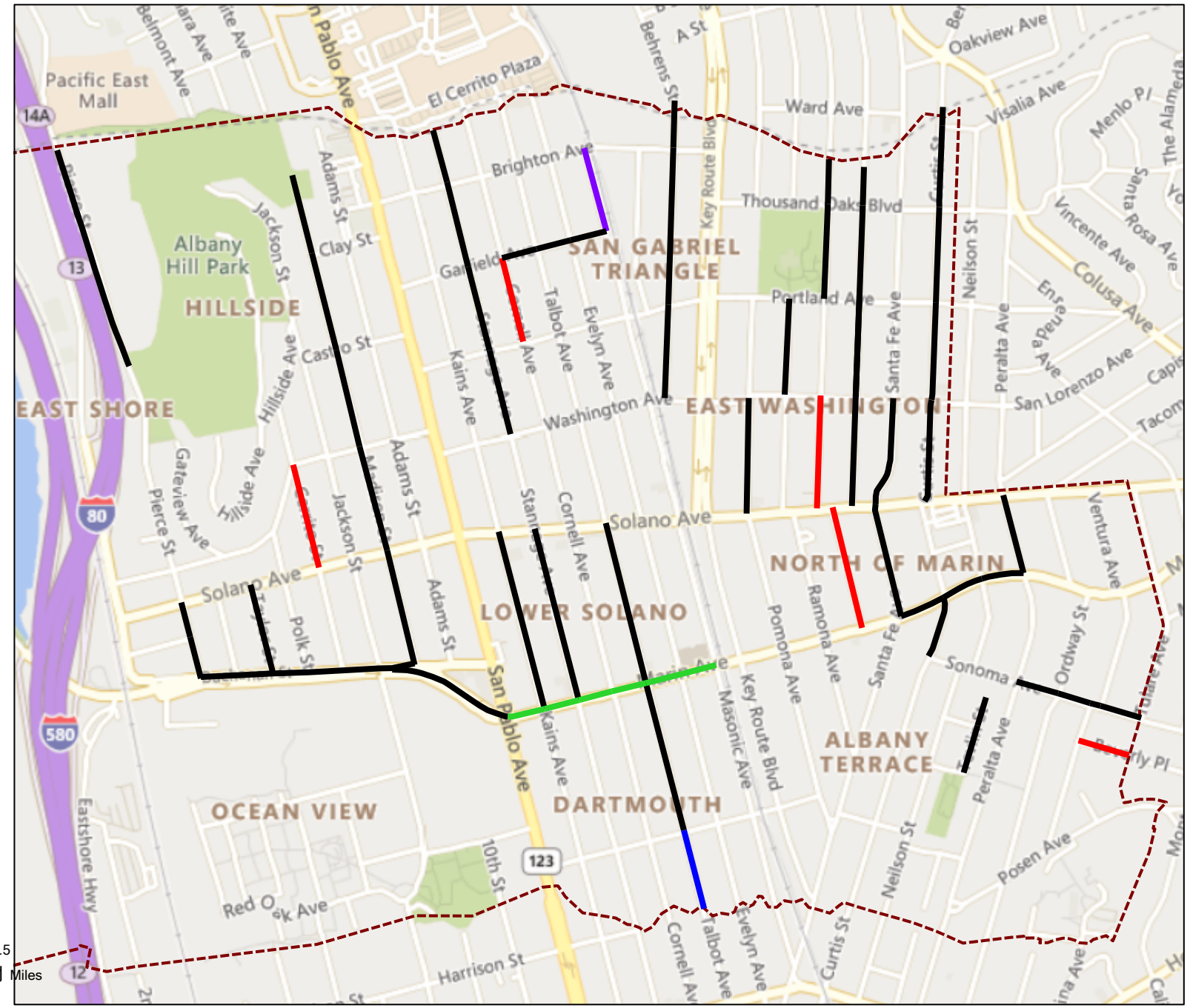
CITY OF ALBANY

Scenario Treatments

Budget $1.36M/Year - 2024 Project Period - Printed: 2/4/2020

Feature Legend

- MILL AND THICK HMA OVERLAY (2.5")
- MILL AND THICK HMA OVERLAY (3")
- RECONSTRUCT (3" HMA AND 9" FDR)
- SEAL CRACKS
- SLURRY SEAL



Increase PCI by 5

($1.9 Million over 5 Years)

- Pavement Network Condition Lane Miles
- Network Condition Summary
- Cost Summary

Target-Driven Scenarios
Pavement Network Condition Lane Miles

Interest: .00% Inflation: .00% Printed: 02/03/2020

Scenario: Increase by 5, 60-65

Objective: Minimum Network Average PCI Target: By Year

Year	Value	Year	Value	Year	Value	Year	Value
Year 1	61	Year 2	62	Year 3	63	Year 4	64
Year 5	65						

Annual budget needs to meet target objectives

Year	Arterial	Collector	Res/Loc	Other	Preventative Maintenance	Total
2020	$725,597	$157,709	$41,845	$105,247	$105,014	$1,030,398
2021	$1,573,814	$8,049	$1,040	$960,632	$9,765	$2,543,535
2022	$1,746,382	$37,378	$32,806	$472,288	$101,434	$2,288,854
2023	$515,284	$486,464	$903,241	$140,393	$34,966	$2,045,382
2024	$367,993	$144,568	$796,282	$285,105	$15,940	$1,593,948

Average Yearly Total: $1,900,423
Grand Total: $9,502,117

Pavement Network prior to treatments in lane miles.

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	56	5.6%	6.6%	13
Collector	58	8.3%	8.8%	11
Other	64	8.8%	7.2%	19
Residential	58	15.5%	12.5%	16

Pavement Network after schedulable treatments applied in lane miles.

2020

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	61	9.1%	6.6%	13
Collector	60	8.8%	8.8%	11
Other	66	10.1%	7.2%	19
Residential	59	15.5%	12.5%	16

2021

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	67	11.8%	6.0%	17
Collector	57	7.1%	10.3%	10
Other	73	13.5%	5.1%	24
Residential	57	15.2%	13.1%	16

Pavement Network after schedulable treatments applied in lane miles.

2022

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	73	15.3%	4.1%	20
Collector	54	6.1%	10.3%	10
Other	75	14.6%	4.0%	26
Residential	56	13.9%	14.4%	15

2023

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	72	16.5%	4.1%	21
Collector	54	7.6%	8.8%	11
Other	75	15.0%	3.6%	26
Residential	60	16.5%	12.4%	17

2024

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	72	17.4%	4.1%	21
Collector	51	8.0%	8.8%	11
Other	77	15.8%	2.8%	27
Residential	64	18.8%	11.5%	19

Target-Driven Scenarios
Network Condition Summary

Interest: 0% Inflation: 0% Printed: 02/03/2020

Scenario: Increase by 5, 60-65

Objective: Minimum Network Average PCI Target: By Year

Year	Value	Year	Value	Year	Value	Year	Value
Year 1	61	Year 2	62	Year 3	63	Year 4	64
Year 5	65						

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment
2020	59	61
2021	56	62
2022	54	63
2023	51	64
2024	48	65

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	5.6%	8.3%	15.5%	8.8%	38.1%
II / III	10.5%	6.5%	5.7%	4.2%	26.8%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	9.1%	8.8%	15.5%	10.1%	43.4%
II / III	7.0%	6.0%	5.7%	2.9%	21.5%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2024 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	17.4%	8.0%	18.8%	15.8%	60.1%
II / III	1.2%	6.7%	3.3%	1.6%	12.7%
IV	0.0%	0.0%	9.5%	2.0%	11.5%
V	4.1%	8.8%	2.0%	0.8%	15.7%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Target-Driven Scenarios - Cost Summary

Interest: 0% Inflation: 0% Printed: 02/03/2020

Scenario: Increase by 5, 60-65

Objective: Minimum Network Average PCI Target: By Year

Year	Value	Year	Value	Year	Value	Year	Value
Year 1	61	Year 2	62	Year 3	63	Year 4	64
Year 5	65						

Year		Rehabilitation	Preventive Maintenance		Total Cost	Deferred
2020	II	$575,456	Non-Project	$105,014	$1,030,398	$13,058,735
	III	$349,928	Project	$0		
	IV	$0				
	V	$0				
	Total	$925,384				
	Project	$0				
2021	II	$135,684	Non-Project	$9,765	$2,543,535	$12,960,433
	III	$386,789	Project	$0		
	IV	$2,011,297				
	V	$0				
	Total	$2,533,770				
	Project	$0				
2022	II	$283,151	Non-Project	$101,434	$2,288,854	$12,284,110
	III	$0	Project	$0		
	IV	$1,904,269				
	V	$0				
	Total	$2,187,420				
	Project	$0				
2023	II	$0	Non-Project	$34,966	$2,045,382	$11,541,759
	III	$0	Project	$0		
	IV	$1,001,392				
	V	$1,009,024				
	Total	$2,010,416				
	Project	$0				
2024	II	$0	Non-Project	$15,940	$1,593,948	$10,721,023
	III	$0	Project	$0		
	IV	$498,285				
	V	$1,079,723				
	Total	$1,578,008				
	Project	$0				

Year	Rehabilitation	Preventive Maintenance	Total Cost	Deferred

Summary

Functional Class	Rehabilitation	Prev. Maint.
Arterial	$4,914,409	$14,661
Collector	$752,400	$81,768
Other	$1,887,567	$76,098
Residential/Local	$1,680,622	$94,592
Total:	$9,234,998	$267,119

Grand Total: $9,502,117

Needs Analysis
&
Zero Budget
(AVG $2.0M/Year over 10 Years)

- Projected PCI/Cost Summary

Needs - Projected PCI/Cost Summary

Inflation Rate = 0.00 % Printed: 02/04/2020

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
2020	83	59	$105,014	$13,984,150	$14,089,164
2021	80	56	$9,765	$550,980	$560,745
2022	79	54	$101,434	$521,644	$623,078
2023	79	51	$38,037	$253,320	$291,357
2024	77	48	$16,410	$0	$16,410
2025	76	45	$21,959	$146,739	$168,698
2026	77	43	$164,020	$579,200	$743,220
2027	78	40	$406,619	$525,771	$932,390
2028	80	38	$305,597	$1,982,291	$2,287,888
2029	79	35	$65,421	$58,905	$124,326

% PM	PM Total Cost	Rehab Total Cost	Total Cost
6.22%	$1,234,276	$18,603,000	$19,837,276

Maintain PCI

($1.1 Million over 10 Years)

- Pavement Network Condition Lane Miles
- Network Condition Summary
- Cost Summary

Target-Driven Scenarios
Pavement Network Condition Lane Miles

Interest: .00% Inflation: .00% Printed: 02/04/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Annual budget needs to meet target objectives

Year	Arterial	Collector	Res/Loc	Other	Preventative Maintenance	Total
2020	$551,717	$36,066	$41,845	$50,842	$105,014	$680,470
2021	$1,080,412	$129,692	$1,040	$289,009	$9,765	$1,500,153
2022	$1,357,532	$37,378	$32,806	$337,267	$101,434	$1,764,983
2023	$947,222	$227,063	$17,749	$457,928	$34,909	$1,649,962
2024	$367,952	$144,593	$481,658	$247,791	$15,915	$1,241,994
2025	$20,993	$144,486	$742,495	$216,801	$21,662	$1,124,775
2026	$448	$917,090	$111,628	$131,052	$160,129	$1,160,218
2027	$41,517	$445,149	$166,564	$132,080	$77,656	$785,310
2028	$53,614	$499,467	$41,723	$45,085	$149,381	$639,889
2029	$59,036	$37,601	$232,758	$299,312	$115,006	$628,707

Average Yearly Total: $1,117,646

Grand Total: $11,176,461

Pavement Network prior to treatments in lane miles.

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	56	5.6%	6.6%	13
Collector	58	8.3%	8.8%	10
Other	64	8.8%	7.2%	19
Residential	58	15.5%	12.5%	16

Pavement Network after schedulable treatments applied in lane miles.

2020

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	60	8.4%	6.6%	13
Collector	59	8.3%	8.8%	10
Other	65	9.8%	7.2%	19
Residential	59	15.5%	12.5%	16

2021

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	63	10.2%	7.6%	15
Collector	57	7.1%	10.3%	10
Other	66	11.0%	7.4%	20
Residential	57	15.2%	13.1%	16

Pavement Network after schedulable treatments applied in lane miles.

2022

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	67	12.8%	6.5%	18
Collector	54	6.1%	10.3%	10
Other	68	11.7%	6.7%	21
Residential	56	13.9%	14.4%	15

2023

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	69	15.1%	5.5%	19
Collector	52	6.8%	9.6%	10
Other	70	13.2%	5.2%	23
Residential	54	13.9%	14.9%	15

2024

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	68	16.0%	5.5%	20
Collector	49	7.2%	9.6%	10
Other	71	13.9%	4.5%	24
Residential	56	15.3%	15.0%	16

2025

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	67	16.0%	5.5%	19
Collector	47	7.6%	9.6%	10
Other	71	14.6%	4.1%	24
Residential	59	17.5%	14.2%	17

2026

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	65	16.0%	5.5%	19
Collector	50	10.5%	9.6%	12
Other	71	14.8%	4.1%	25
Residential	59	17.5%	14.9%	18

2027

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	64	16.0%	5.5%	19
Collector	50	11.7%	9.6%	14
Other	71	15.2%	3.7%	25
Residential	58	18.0%	15.7%	18

Pavement Network after schedulable treatments applied in lane miles.

2028

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	64	16.0%	5.5%	19
Collector	52	13.2%	9.6%	15
Other	71	15.5%	3.7%	25
Residential	57	18.0%	15.7%	18

2029

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	64	16.0%	5.5%	19
Collector	51	13.2%	9.6%	15
Other	72	16.4%	3.7%	26
Residential	57	18.6%	15.0%	18

Target-Driven Scenarios
Network Condition Summary

Interest: 0% Inflation: 0% Printed: 02/04/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment
2020	59	60
2021	56	60
2022	54	60
2023	51	60
2024	48	60
2025	45	60
2026	43	60
2027	40	60
2028	38	60
2029	35	60

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	5.6%	8.3%	15.5%	8.8%	38.1%
II / III	10.5%	6.5%	5.7%	4.2%	26.8%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	8.4%	8.3%	15.5%	9.8%	42.0%
II / III	7.7%	6.5%	5.7%	3.1%	22.9%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2029 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	16.0%	13.2%	18.6%	16.4%	64.3%
II / III	1.2%	0.7%	0.0%	0.0%	1.9%
IV	0.0%	0.0%	8.2%	0.0%	8.2%
V	5.5%	9.6%	6.8%	3.7%	25.6%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Target-Driven Scenarios - Cost Summary

Interest: 0% Inflation: 0% Printed: 02/04/2020

Scenario: Maintain 60 PCI

Objective: Minimum Network Average PCI Target: Overall 60

Year	Rehabilitation		Preventive Maintenance		Total Cost	Deferred
2020	II	$575,456	Non-Project	$105,014	$680,470	$13,408,662
	III	$0	Project	$0		
	IV	$0				
	V	**$0**				
	Total	**$575,456**				
	Project	$0				
2021	II	$135,684	Non-Project	$9,765	$1,500,153	$14,353,742
	III	$682,312	Project	$0		
	IV	$672,392				
	V	**$0**				
	Total	**$1,490,388**				
	Project	$0				
2022	II	$283,151	Non-Project	$101,434	$1,764,983	$14,201,290
	III	$0	Project	$0		
	IV	$1,380,398				
	V	**$0**				
	Total	**$1,663,549**				
	Project	$0				
2023	II	$0	Non-Project	$34,909	$1,649,962	$13,854,300
	III	$0	Project	$0		
	IV	$1,615,053				
	V	**$0**				
	Total	**$1,615,053**				
	Project	$0				
2024	II	$0	Non-Project	$15,915	$1,241,994	$13,385,493
	III	$0	Project	$0		
	IV	$498,285				
	V	**$727,794**				
	Total	**$1,226,079**				
	Project	$0				
2025	II	$0	Non-Project	$21,662	$1,124,775	$13,187,294
	III	$0	Project	$0		
	IV	$237,026				
	V	**$866,087**				
	Total	**$1,103,113**				
	Project	$0				

Year		Rehabilitation	Preventive Maintenance		Total Cost	Deferred
2026	II	$9,359	Non-Project	$160,129	$1,160,218	$13,145,671
	III	$0				
	IV	$990,730	Project	$0		
	V	$0				
	Total	$1,000,089				
	Project	$0				
2027	II	$0	Non-Project	$77,656	$785,310	$13,078,590
	III	$0				
	IV	$409,269	Project	$0		
	V	$298,385				
	Total	$707,654				
	Project	$0				
2028	II	$6,807	Non-Project	$149,381	$639,889	$13,064,218
	III	$0				
	IV	$483,701	Project	$0		
	V	$0				
	Total	$490,508				
	Project	$0				
2029	II	$0	Non-Project	$115,006	$628,707	$12,837,177
	III	$0				
	IV	$282,184	Project	$0		
	V	$231,517				
	Total	$513,701				
	Project	$0				

Summary

Functional Class	Rehabilitation	Prev. Maint.
Arterial	$4,290,247	$190,196
Collector	$2,447,029	$171,556
Other	$2,027,518	$179,649
Residential/Local	$1,620,796	$249,470
Total:	$10,385,590	$790,871

Grand Total: $11,176,461

Increase PCI to 75

($1.8 Million over 10 Years)

- Pavement Network Condition Lane Miles
- Network Condition Summary
- Cost Summary

Target-Driven Scenarios
Pavement Network Condition Lane Miles

Interest: .00% Inflation: .00% Printed: 02/04/2020

Scenario: Reach 75 in 10yrs

Objective: Minimum Network Average PCI — Target: By Functional Class and Year

Arterial	Value	Collector	Value	Residential/Local	Value	Other	Value
Year 1	58.8	Year 1	60.7	Year 1	60.4	Year 1	65.9
Year 2	60.6	Year 2	62.2	Year 2	61.8	Year 2	66.8
Year 3	62.4	Year 3	63.8	Year 3	63.2	Year 3	67.7
Year 4	64.2	Year 4	65.4	Year 4	64.6	Year 4	68.6
Year 5	66	Year 5	67	Year 5	66	Year 5	69.5
Year 6	67.8	Year 6	68.6	Year 6	67.4	Year 6	70.4
Year 7	69.6	Year 7	70.2	Year 7	68.8	Year 7	71.3
Year 8	71.4	Year 8	71.8	Year 8	70.2	Year 8	72.2
Year 9	73.2	Year 9	73.4	Year 9	71.6	Year 9	73.1
Year 10	75	Year 10	75	Year 10	73	Year 10	74

Annual budget needs to meet target objectives

Year	Arterial	Collector	Res/Loc	Other	Preventative Maintenance	Total
2020	$551,717	$388,678	$519,510	$241,591	$105,014	$1,701,496
2021	$1,080,412	$791,351	$278,319	$320,375	$9,765	$2,470,457
2022	$900,460	$645,298	$445,777	$207,888	$101,434	$2,199,423
2023	$947,222	$701,208	$548,178	$348,394	$35,088	$2,545,002
2024	$415,952	$718,761	$461,285	$233,600	$16,063	$1,829,598
2025	$717,003	$524,261	$495,013	$216,799	$21,764	$1,953,076
2026	$562,588	$272,579	$278,377	$180,858	$160,639	$1,294,402
2027	$622,133	$698,560	$446,067	$292,964	$95,758	$2,059,724
2028	$694,688	$286,215	$368,621	$38,285	$193,665	$1,387,809
2029	$43,694	$370,866	$377,913	$201,219	$142,483	$993,692
					Average Yearly Total:	$1,843,468
					Grand Total:	$18,434,679

Pavement Network prior to treatments in lane miles.

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	56	5.6%	6.6%	13
Collector	58	8.3%	8.8%	12
Other	64	8.8%	7.2%	20
Residential	58	15.5%	12.5%	18

Pavement Network after schedulable treatments applied in lane miles.

2020

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	60	8.4%	6.6%	13
Collector	62	9.5%	8.1%	12
Other	67	10.7%	7.2%	20
Residential	62	16.9%	11.1%	18

Pavement Network after schedulable treatments applied in lane miles.

2021

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	63	10.2%	7.6%	15
Collector	64	9.9%	7.5%	13
Other	68	11.8%	6.8%	21
Residential	62	17.4%	10.9%	18

2022

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	65	11.8%	7.6%	17
Collector	65	10.2%	6.1%	14
Other	68	12.1%	6.6%	22
Residential	63	17.3%	11.0%	19

2023

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	66	14.0%	6.6%	18
Collector	68	11.7%	4.6%	15
Other	70	13.2%	5.4%	23
Residential	65	18.9%	10.0%	20

2024

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	66	15.0%	6.5%	19
Collector	70	13.4%	3.4%	16
Other	71	13.9%	4.7%	24
Residential	67	20.2%	10.1%	20

2025

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	69	16.1%	5.4%	20
Collector	71	14.6%	2.6%	17
Other	71	14.6%	4.4%	24
Residential	68	21.7%	10.0%	21

2026

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	70	17.1%	4.4%	20
Collector	70	15.5%	4.6%	17
Other	72	14.9%	4.0%	25
Residential	69	22.1%	10.3%	22

Pavement Network after schedulable treatments applied in lane miles.

2027

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	73	18.0%	3.5%	21
Collector	74	17.5%	3.9%	19
Other	74	15.8%	3.1%	26
Residential	71	23.4%	10.2%	23

2028

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	76	19.1%	2.4%	22
Collector	74	18.2%	4.6%	20
Other	73	15.8%	3.1%	26
Residential	72	24.3%	9.3%	24

2029

Functional Class	PCI	Percentage of the Network in Very Good Condition	Percentage of the Network in Poor or Very Poor Condition	Remaining Life
Arterial	75	19.1%	2.4%	22
Collector	76	19.2%	3.6%	21
Other	74	16.4%	3.5%	26
Residential	73	25.4%	8.2%	24

Target-Driven Scenarios
Network Condition Summary

Interest: 0% Inflation: 0% Printed: 02/04/2020

Scenario: Reach 75 in 10yrs

Objective: Minimum Network Average PCI Target: By Functional Class and Year

Arterial	Value	Collector	Value	Residential/Local	Value	Other	Value
Year 1	58.8	Year 1	60.7	Year 1	60.4	Year 1	65.9
Year 2	60.6	Year 2	62.2	Year 2	61.8	Year 2	66.8
Year 3	62.4	Year 3	63.8	Year 3	63.2	Year 3	67.7
Year 4	64.2	Year 4	65.4	Year 4	64.6	Year 4	68.6
Year 5	66	Year 5	67	Year 5	66	Year 5	69.5
Year 6	67.8	Year 6	68.6	Year 6	67.4	Year 6	70.4
Year 7	69.6	Year 7	70.2	Year 7	68.8	Year 7	71.3
Year 8	71.4	Year 8	71.8	Year 8	70.2	Year 8	72.2
Year 9	73.2	Year 9	73.4	Year 9	71.6	Year 9	73.1
Year 10	75	Year 10	75	Year 10	73	Year 10	74

Projected Network Average PCI by year

Year	Never Treated	With Selected Treatment
2020	59	63
2021	56	64
2022	54	65
2023	51	67
2024	48	68
2025	45	70
2026	43	70
2027	40	73
2028	38	74
2029	35	75

Percent Network Area by Functional Classification and Condition Class

Condition in base year 2020, prior to applying treatments.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	5.6%	8.3%	15.5%	8.8%	38.1%
II / III	10.5%	6.5%	5.7%	4.2%	26.8%
IV	5.1%	8.8%	11.1%	6.8%	31.8%
V	1.4%	0.0%	1.4%	0.5%	3.3%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2020 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total
I	8.4%	9.5%	16.9%	10.7%	45.5%
II / III	7.7%	6.0%	5.7%	2.2%	21.6%
IV	5.1%	8.1%	11.1%	6.8%	31.1%
V	1.4%	0.0%	0.0%	0.5%	1.9%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Condition in year 2029 after schedulable treatments applied.

Condition Class	Arterial	Collector	Res/Loc	Other	Total

I	19.1%	19.2%	25.4%	16.4%	80.1%
II / III	1.2%	0.7%	0.0%	0.3%	2.2%
IV	0.0%	1.0%	8.2%	0.4%	9.6%
V	2.4%	2.6%	0.0%	3.1%	8.1%
Total	22.6%	23.5%	33.6%	20.2%	100.0%

Target-Driven Scenarios - Cost Summary

Interest: 0% Inflation: 0% Printed: 02/04/2020

Scenario: Reach 75 in 10yrs

Objective: Minimum Network Average PCI Target: By Functional Class and Year

Arterial	Value	Collector	Value	Residential/Local	Value	Other	Value
Year 1	58.8	Year 1	60.7	Year 1	60.4	Year 1	65.9
Year 2	60.6	Year 2	62.2	Year 2	61.8	Year 2	66.8
Year 3	62.4	Year 3	63.8	Year 3	63.2	Year 3	67.7
Year 4	64.2	Year 4	65.4	Year 4	64.6	Year 4	68.6
Year 5	66	Year 5	67	Year 5	66	Year 5	69.5
Year 6	67.8	Year 6	68.6	Year 6	67.4	Year 6	70.4
Year 7	69.6	Year 7	70.2	Year 7	68.8	Year 7	71.3
Year 8	71.4	Year 8	71.8	Year 8	70.2	Year 8	72.2
Year 9	73.2	Year 9	73.4	Year 9	71.6	Year 9	73.1
Year 10	75	Year 10	75	Year 10	73	Year 10	74

Year		Rehabilitation	Preventive Maintenance		Total Cost	Deferred
2020	II	$575,456	Non-Project	$105,014	$1,701,496	$12,387,638
	III	$312,392				
	IV	$230,969	Project	$0		
	V	$477,665				
	Total	$1,596,482				
	Project	$0				
2021	II	$135,684	Non-Project	$9,765	$2,470,457	$12,362,414
	III	$424,325				
	IV	$1,326,374	Project	$0		
	V	$574,309				
	Total	$2,460,692				
	Project	$0				
2022	II	$283,151	Non-Project	$101,434	$2,199,423	$11,775,523
	III	$0				
	IV	$793,947	Project	$0		
	V	$1,020,891				
	Total	$2,097,989				
	Project	$0				
2023	II	$0	Non-Project	$35,088	$2,545,002	$10,533,675
	III	$0				
	IV	$1,278,623	Project	$0		
	V	$1,231,291				
	Total	$2,509,914				
	Project	$0				
2024	II	$0	Non-Project	$16,063	$1,829,598	$9,377,856
	III	$0				
	IV	$607,819	Project	$0		
	V	$1,205,716				
	Total	$1,813,535				
	Project	$0				

Year		Rehabilitation	Preventive Maintenance		Total Cost	Deferred
2025	II	$0	Non-Project	$21,764	$1,953,076	$8,351,458
	III	$0	Project	$0		
	IV	$237,026				
	V	$1,694,286				
	Total	$1,931,312				
	Project	$0				
2026	II	$9,359	Non-Project	$160,639	$1,294,402	$8,156,630
	III	$0	Project	$0		
	IV	$272,066				
	V	$852,338				
	Total	$1,133,763				
	Project	$0				
2027	II	$0	Non-Project	$95,758	$2,059,724	$6,880,138
	III	$0	Project	$0		
	IV	$644,729				
	V	$1,319,237				
	Total	$1,963,966				
	Project	$0				
2028	II	$0	Non-Project	$193,665	$1,387,809	$6,174,848
	III	$0	Project	$0		
	IV	$246,604				
	V	$947,540				
	Total	$1,194,144				
	Project	$0				
2029	II	$0	Non-Project	$142,483	$993,692	$5,617,110
	III	$0	Project	$0		
	IV	$486,591				
	V	$364,618				
	Total	$851,209				
	Project	$0				

Summary

Functional Class	Rehabilitation	Prev. Maint.
Arterial	$6,361,071	$174,798
Collector	$5,165,127	$232,650
Other	$2,090,415	$191,558
Residential/Local	$3,936,393	$282,667
Total:	$17,553,006	$881,673

Grand Total: $18,434,679

Appendix C
Definitions

DEFINITIONS

This section is intended to define important pavement design acronyms and terms used when discussing a Pavement Management System (PMS).

GENERAL TERMS

PMS - Pavement Management System - A program to aid in tracking the condition of roads and a means to help quantify the cost of maintaining the roads in a given area.

TI - Traffic Index - Cars and light trucks have little impact on the pavement structure. Larger/Heavier trucks have very significant impacts on the pavement due to the high axle weights. The total EALs is converted into a design Traffic Index (TI). The design TI is the total number of EALs that the pavement will support before it begins to fail, regardless of the passage of time. Normally for a new pavement, the EALs over a 20_year period are used. For rehabilitation procedures such as overlays, 10 years is generally used.

PCI - Pavement Condition Index - A rating scale for the condition of a road segment. 100 represents no defects and recent major rehabilitation.

CRITICAL PCI - The PCI value at which the rate of loss increases with time, or the cost of applying a maintenance treatment increases significantly.

CLS / FC - Functional Classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide. There are three highway functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic.

Arterials - provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.

Collectors - provide a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.

Residential/Local - consists of all roads not defined as arterials or collectors and primarily provides access to land with little or no through movement.

- (*Excerpted from the U.S. Department of Transportation, Federal Highway Administration web site on "Functional Classification".)*

EMULSION - A chemical added to water and asphalt that keeps the asphalt in a stable suspension in the water.

AC - Asphaltic Concrete - A plant mixed asphalt binder (asphalt cement that is classified according to the Standard Specification for Performance Graded Asphalt Binder) and aggregate (rocks) thoroughly mixed and compacted into a mass.

PCC - Portland Cement Concrete

OVERLAY - The placement of asphaltic concrete mix over an existing asphaltic concrete or portland cement concrete surface.

Light Overlay - would include any overlay of less than 2 inches of asphalt.

Heavy Overlay - is a thicker layer of asphalt and might include such items/operations as, but not limited to fabric, milling/grinding and reconstruction.

PREVENTIVE MAINTENANCE - Provides budget dollars for localized pavement repairs such as digouts and crack filling.

SLURRY SEAL - Includes a graded aggregate along with emulsion and water. Generally squeegeed and generally consists of two layers.

REFLECTIVE CRACKING - Cracks that occur in new "thin" overlays that are identical to the cracks that were present in the existing pavement.

ALLIGATOR CRACKING - Alligator or fatigue cracking is a series of interconnecting cracks caused by fatigue failure of the asphalt concrete surface under repeated traffic loading. Cracking begins at the bottom of the asphalt surface (or stabilized base) where the stress and strain are highest under a wheel load. The cracks propagate to the surface initially as a series of parallel longitudinal cracks. After repeated traffic loading, the cracks connect, forming many sided, sharp-angled pieces that develop a pattern resembling chicken wire or the skin of an alligator. Alligator cracking occurs only in areas subjected to repeated traffic loading, such as wheel paths. (Pattern-type cracking that occurs over an entire area not subjected to loading is called "block cracking," which is not a load-associated distress.)

BLOCK CRACKING - Block cracks are interconnected cracks that divide the pavement into approximately rectangular pieces. Block cracking is caused mainly by shrinkage of the asphalt concrete and daily temperature cycling (which results in daily stress/strain cycling). It is not load-associated. Block cracking usually indicates that the asphalt has hardened significantly. Block cracking normally occurs over a large portion of the pavement area, but sometimes will occur only in non-traffic areas. This type of distress differs from alligator cracking in that alligator cracks form smaller, many-sided pieces with sharp angles. Also, unlike block, alligator cracks are caused by repeated traffic loadings, and are therefore found only in traffic areas (i.e., wheel paths).

LONGITUDINAL / TRANSVERSE CRACKING - Longitudinal cracks are parallel to the pavement's centerline or laydown direction. Transverse cracks extend across the pavement at approximately right angles to the pavement centerline or direction of laydown. These types of cracks are not usually load-associated.

WEATHERING & RAVELING - Weathering and raveling is the wearing away of the pavement surface due to a loss of asphalt or tar and dislodged aggregate particles. These distresses indicate that either the asphalt binder has hardened appreciably or that a poor quality mixture is present. In addition, raveling may be caused by certain types of traffic, i.e., tracked vehicles. Softening of the surface and dislodging of the aggregates due to oil spillage are also included under raveling.

BUMPS & SAGS - Bumps are small, localized, upward displacements of the pavement surface. They are different from shoves in that shoves are caused by unstable pavement. Sags are small, abrupt, downward displacements of the pavement surface. If bumps appear in pattern perpendicular to traffic flow and are spaced at less than 3 m (10 ft), the distress is called corrugation. Distortion and displacement that occur over large areas of the pavement surface causing large and/or long dips in the pavement should be recorded at “swelling.”

RUTTING / SHOVING - A rut is a surface depression in the wheel paths. Pavement uplift may occur along the sides of the rut, but, in many instances, ruts are noticeable only after a rainfall when the paths are filled with water. Rutting stems from a permanent deformation in any of the pavement layers or subgrades, usually caused by consolidated or lateral movement of the materials due to traffic load.

Shoving is a permanent, longitudinal displacement of a localized area of the pavement surface caused by traffic loading. When traffic pushes against the pavement, it produces a short, abrupt wave in the pavement surface. This distress normally occurs only in unstable liquid asphalt mix (cutback or emulsion) pavements.

PATCHING & UTILITY CUTS - A patch is an area of pavement that has been replaced with new material to repair the existing pavement. A patch is considered a defect no matter how well it is performing (a patched area or adjacent area usually does not perform as well as an original pavement section). Generally, some roughness is associated with this distress.

POTHOLES - Most often are structurally related distresses and should not be confused with raveling and weathering.

PAVEMENT PRESERVATION - Applying the Right Treatment to the Right Pavement at the Right Time using the Right Materials.

R-VALUE - A test to evaluate the base, subbase and subgrades of an area to be used in pavement designing for thickness of asphalt.

ESAL - The impact of trucks is measured in equivalent single
18,000 pound axle loads (EALs).

STREETSAVER DEFINITIONS

MANAGEMENT SECTION - This is used to maintain an inventory of all the roads and road sections in your jurisdiction.

EVENTS – This provides for viewing and maintaining of Events or changes that have been made on a management section. The Events that are included are:

- Management Section Creation.
- Results from Maintenance and Rehabilitation treatments that have been applied to the Management Section.
- Results from Visual Inspections of Management Sections.
- Listing of changes/edits of information on a Management Section.

DETERIORATION CURVE - This provides a graphical representation of the current pavement condition index and the historical PCIs for each section of road in your jurisdiction.

MAINTENANCE/REHABILITATION - This is used to review the proposed maintenance, new maintenance, and rehabilitation for any road section in your jurisdiction.

BRANCH - Generally a road name or a road name with a direction of travel.

SECTION - Usually a branch or road is large and needs to be divided into smaller pieces to maintain. These smaller pieces are labeled as “sections” and designated with a number and a beginning and ending location.

DISTRESSES - Defects found in asphalt concrete pavements or portland cement concrete. These defects degrade the condition of the road.

RATING - The rating is the weight cost - effectiveness ratio of the recommended treatment.

% OF ENVIRONMENT - The percentage of the pavement distress in a management section that is an environment related distress.

% LOAD RELATED - The percentage of the pavement distress in a management section that is load related distress (caused by excessive weight on the pavement surface).
% OTHER - Is the percentage of the pavement section that is not a load related or environment related distress.

ACTIVE - Indicates whether or not the current record is active.

AREA - Contains the area of a section in square feet. This is automatically calculated using the values that are entered in the Length and Width fields. However, if the section is irregularly shaped the area can be entered by the user.

AREA ID - Is an optional, jurisdiction defined field to identify the area in which the section is located. For example, each neighborhood or subdivision, or each geographic type (mountain, valley, coast, etc.) in the jurisdiction may be assigned a letter of the alphabet.

BASE BUDGET - Provides an area for you to enter the dollar amount of your base budget.

BASE BUDGET INCREASE FACTOR - Stores the percent that the base budget will increase each year.

BASE PM SPLIT - Percent of the base budget that has been set aside for preventive maintenance.

BEGINNING LOCATION - Identifies the point that defines the beginning of the section. This is generally the name of a cross road or other landmark.

CONDITION - Column lists the condition levels (2-5) that require stop-gap treatments.

COST/ SQ YD - Indicates the cost per square yard of road for the suggested treatment.

CURRENT PCI - Calculated from either a visual inspection or a maintenance treatment.

DESCRIPTION - Displays a description of the item named in the previous column in a grid.

DISTRESS - Contains the type of distress present on a section of a road.

END LOCATION - Identifies the point that defines the end of the section. This is generally the name of a cross road or other landmark.

EVENT ACTIVE - Indicates whether an Event is currently part of the active history for the current Section.

EVENT PCI - The PCI after the selected Event occurred.

EVENT TRANSACTION TYPE - Includes: Creation, Inspection, Treatment, Split, Combine, Attribute Change and Core Data Change.

EVENT VALID - Indicates if an Event can be activated and made part of the valid events for the current section.

FUNDING SOURCE - Is an optional, jurisdiction defined field to identify the funding source for the section; an example might be G for general fund.

GENERAL CODE - Is an optional, jurisdiction defined field used to identify sections of pavement sharing common characteristics, i.e., drainage type.

INFLATION RATE - Is the inflation used throughout your jurisdiction. You may wish to consult your financial department with this value.

INSPECTION AREA - Is the total area of the inspection unit.

INTEREST RATE - Contains the interest rate used throughout your jurisdiction.

LIFE EXTENSION - Is the number of years that a maintenance treatment extends the life of a pavement surface.

MAINTENANCE DATE - Displays the date the maintenance was completed.

MANAGEMENT UNIT - Relates a project to a management unit.

MILEPOSTS - Display the beginning and ending points of a management section.

NEW PCI - Stores the PCI value that was calculated after a treatment was applied.

NUMBER OF SURFACE SEALS BEFORE OVERLAY - Displays the recommended number of surface seals before the application of an overlay.

OLD PCI - Displays the pavement condition index before a treatment was applied.

OTHER - Displays the weighting factor applied to management sections with functional classes other than arterial, collector, and residential.

OVERLAY - Displays the overlay code that corresponds to an overlay procedure.

OVERLAY CODE - Is an identifier for the treatment type; use one of the six codes from the pop-up list that appears when this is activated.

PCI CAP - Stores the maximum PCI value that will be included in needs and scenario calculations. If a PCI value is larger than the PCI Cap value, it will not be included.

PCI EFFECTIVENESS CUT-OFF - Contains the minimum PCI value used in calculating the area under the projected performance curve. That area is used in ranking sections needing work, and the area below the PCI Cut-Off value is not included in that area. It should generally be the lowest PCI value that defines the minimum acceptable condition for all of the pavement types and functional classification groupings.

PCI HIGH - LOW > 25 - Is marked if the difference between the high and low PCI values is greater than 25.

PCI HIGH VALUE - Is the maximum PCI value for an inspection unit used in the last PCI calculation for a management unit.

PCI LOW VALUE - Is the minimum PCI value for an inspection unit used in the last PCI calculation for a management unit.

PM% - Scenarios based on a yearly budget, this column stores the percent that has been set aside for preventive maintenance.

REPLACEMENT COST - Is the cost per square yard to install a new pavement surface.

RESIDENTIAL $ - Indicates the cost of a stop-gap treatment per square yard when applied to a road with a residential functional class and a given condition.

ROAD ID - Contains a two-character identifier that was assigned to the road. The combination of Road Number, Road Name, and Road ID must be unique for each road section.

ROAD NAME - Displays the name of the road that corresponds to the road number and road ID. The combination of Road Number, Road Name, and Road ID must be unique for each road section.

ROAD NUMBER - Contains the number that was assigned to a road. The combination of Road Number, Road Name, and Road ID must be unique for each road section.

SECTION ID - Is an identifier that is unique for each section of a given street. Note that the Street ID and the Section ID combined describe the individual section. Therefore, that combination must be unique. The same Section ID can be reused as long as it is used in conjunction with a different Street ID each time.

SEGMENT LENGTH - Is the length in feet of the management section.

SELECT MANAGEMENT SECTIONS - Allows you to calculate PCI values based on selected management sections. If this button is marked, the management sections that have had records updated since the last calculations are displayed in a grid. Select the management sections you want included in the calculations from this grid.

SPECIAL - Check box is marked if the displayed inspection unit is non-representative of a section as a whole.

SPECIAL UNIT - The information will either be Y or blank. Y is an indication that this inspection unit is in some way non-representative of the section as a whole, and would receive a different maintenance/rehabilitation treatment from the rest of the section.

STANDARD INSPECTION UNITS - Is the typical number of inspection units that would be used for a particular management section.

STOP-GAP APPLICATION INTERVAL - Indicates the number of years between the applications of stop-gap treatments.

STREET ID - Is an identifier that is unique for each street. The Street ID usually bears some similarity to the actual street name.

STREET NAME - Is the full name of the street including “Street”, “Way”, “Court” etc.

TREATMENT - Contains the type of treatment the road received or will receive.

TREATMENT COST - Is an optional field giving the cost in dollars and cents of the treatment.

UNIT OF MEASURE - Displays the units of measure used to measure an item.

UNIT PRICE - Displays the price paid for an inventory item.

VISUAL PCI - Used to identify PCI calculations that have been determined based upon a visual inspection. If this check box is blank, then the PCI was extrapolated based upon the maintenance treatment that has been applied to a management section.

WEIGHTING FACTORS - Section displays the weighting factors established by your jurisdiction for the functional classes.

YEAR OF MAINTENANCE - Stores the proposed year of a treatment.

YEARS BETWEEN CRACK SEALS - Displays the number of years between the application of crack seals for the functional class with a specific severity.

YEARS BETWEEN SURFACE SEALS - Displays the recommended number of years that should come between surface seal application for the functional class with the indicated severity.

YEARS TO CALCULATE - Stores the number of years you want to include in the Budget Needs calculation. The number of years cannot be less than 5 or more than 20.

REPORT DEFINITIONS

ZONES - Geographical areas of the city defined by city staff to aid in the development of a maintenance plan for residential roads.

CL - Centerline Mile - a measuring of the length of a road regardless of the width of the road.

LM - Lane Mile - a measurement of the length of all the lanes for a given FC or area.

ACTION / TREATMENT - A proposed type of rehabilitation work that should be used on a given road segment, based on PCI, FC and engineering evaluation.

ANNUAL BUDGET - The amount of money that is available each year to be used for pavement maintenance. These funds can come from various sources and can vary from year to year, although it is generally a fixed figure.