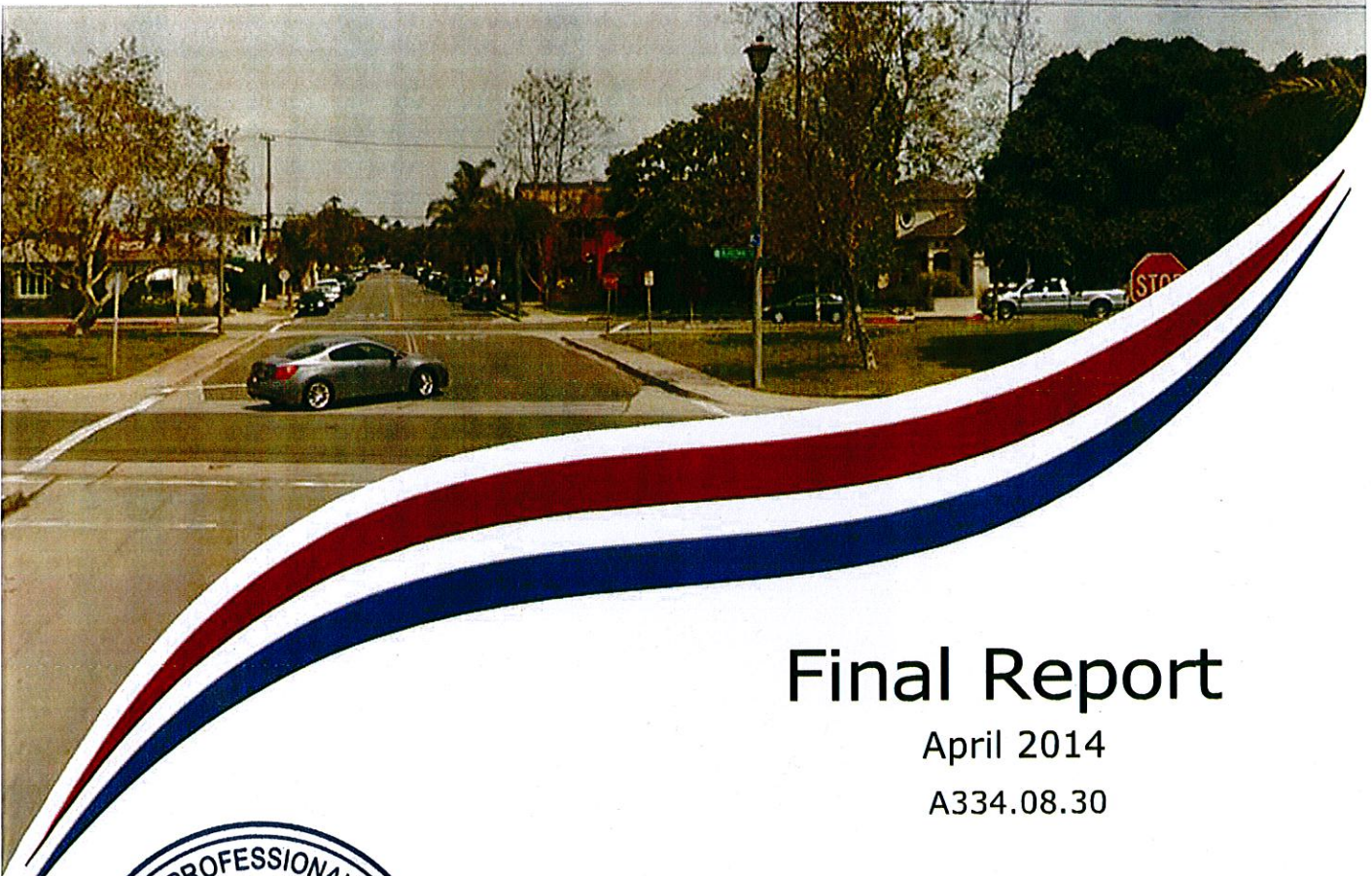


**City of Seal Beach**  
**2013-2014 Pavement Management Program Update**  
211 8th Street  
Seal Beach, CA 90740



# Final Report

April 2014

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**ORANGE COUNTY TRANSPORTATION AUTHORITY**

**M2 - BIENNIAL SUBMITTAL**

**CITY OF SEAL BEACH**

**DUE: MONDAY, JUNE 30, 2014**

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## EXECUTIVE SUMMARY

The City of Seal Beach performs biennial updates of its Pavement Management Program (PMP) to assist policy makers in the best use of City funds for street maintenance while complying with the Orange County Transportation Authority (OCTA)'s Measure M2 Program. This report summarizes the findings from the 2013/2014 PMP Update.

The City is responsible for the maintenance and repair of approximately 41.3 centerline miles of pavements, which includes 12.6 miles in the Master Plan Arterial Highway (MPAH) "Arterial" network and 28.7 miles of local streets. In order to manage this network, the City utilizes the MicroPAVER pavement management program (PMP).

The current weighted average Pavement Condition Index<sup>1</sup> (PCI) of the City is 83. Overall, more than half of the City's Street network is in the "very good" and "good" condition category. Approximately nineteen percent (18.9%) of the pavement network area is in the "Poor" or "Very Poor" condition category. Table 1 provides a breakdown of the network PCI based on the functional class, and shows that local streets are currently in better condition than the Arterials/MPAH network.

Functional Classification	Pavement Area (sf)	Centerline Mileage	Weighted Average PCI
Arterial/MPAH	4,191,202	12.6	75
Local Streets	5,259,654	28.7	89
<b>Total</b>	<b>9,450,856</b>	<b>41.3</b>	<b>83</b>

<sup>1</sup> The weighted average PCI is a result of multiplying the area of each street section by the PCI of that section, totaling all of the sections together and then dividing by the total of the network areas or functional classification.



Table 2 offers a summary of the current network condition by condition category.

Condition Category	PCI Range	Network	Percent Area of Pavement	Area of Pavement (sf)
Very Good	86-100	Arterials/MPAH	21.4	2,023,514
		Local	46.3	4,374,550
Good	75-85	Arterials/MPAH	7.8	733,325
		Local	2.3	217,860
Fair	60-74	Arterials/MPAH	1.2	110,540
		Local	2.2	207,974
Poor	41-59	Arterials/MPAH	4.7	446,389
		Local	2.9	274,466
Very Poor	0-40	Arterials/MPAH	9.3	877,434
		Local	2.0	184,804
<b>Totals</b>				<b>9,450,856</b>

The incentive is a 10% reduction in local matching fund requirements, if either of the following conditions apply i.e.

- a) Show measurable improvement of paved road conditions during the previous reporting period defined as an overall weighted (by area) average system improvement of one PCI point with no reduction in the overall weighted (by area) average PCI in the Master Plan of Arterial Highways (MPAH) or local street categories;

*or*

- b) Have road pavement conditions during the previous reporting period within the highest 20% of the scale for road pavement conditions in conformance with OCTA Ordinance No. 3, defined as a PCI of 75 or higher.

The City's PCI rating continues to comply with the Measure M2 subparagraph "b" above. Since 2008, the City has maintained a PCI greater than 75. Even though the analysis for this update shows the potential decrease in the overall PCI from 85 to 83, the City will still remain eligible for the 10% reduction in local matching fund requirement.



Four budget scenarios were performed as part of this report to illustrate budget impacts on the City's roadway network. The first two scenarios include an unlimited budget and to keep the network in its current condition. A third budget scenario was run with the premise of keeping the average PCI above 75 (keep the City eligible for the 10% reduction). And finally scenario four deals with the premise that the City has zero dollars for its pavement maintenance and rehabilitation for the next seven years.

**Scenario 1: Unconstrained Budget** – the total amount for the next seven years and the budget for each year are the same as identified in the budget needs analysis, i.e. \$14.9 million. This scenario will spend \$10.8 million in 2014 to rehabilitate the City's entire pavement. It will improve the condition of the streets to a PCI of 87 by 2020 and eliminate the unfunded backlog.

**Scenario 2: Maintain PCI at 83** - The budget required to maintain the City's streets at a PCI of 83 would be \$10.1 million over the next seven years. In the meantime, the unfunded backlog will decrease from \$8.9 million to \$8.4 million by 2020.

**Scenario 3: Existing Budget** - This scenario illustrates the impacts on the network at the City's current budget of \$4.0 million over seven years. The PCI of the network will deteriorate to 74, and the unfunded backlog will grow from \$5.3 million to \$16.4 million by 2020.

**Scenario 4: Do Nothing** – This Scenario illustrates that a zero budget will increase the unfunded backlog to \$24.1 million after seven years and the pavement condition will deteriorate from a PCI of 83 to 68 by 2020.

Note that the unfunded backlog consists of pavement maintenance that is needed, but which cannot be accomplished due to lack of funding. Shrinking budgets have forced many California cities and counties to defer much-needed road maintenance. By deferring maintenance, there are multiple consequences including, the frequency of citizens' complaints about the condition of the network, the amount of claims increases and the cost to repair these roads rises as well.

All pavement inspections were completed during the winter months of 2013/2014 and do not reflect the planned or designed work intended to go out to construction during fiscal year 2013/2014. Funds budgeted for construction during the summer of 2014 include approximately \$2,000,000 for Westminster Avenue from Seal Beach Blvd to Bolsa Chica Road along with \$100,000 for local road paving and \$50,000 for slurry seal treatments. Any and all work completed in this current year will be reflected in the next biennial report in 2016. As a result, PCI ratings have decreased slightly since the PMP report in 2014 owing mostly to current fiscal year road paving not occurring before the street network was rated during the winter months of 2013/2014.





## Pavement Budget

The City's current budget for pavement maintenance and rehabilitation is \$4.03 million for next seven years. At this budget level, the network average PCI is expected to decrease from the current level of 83, which is in "Good" condition category, to 75. In addition, 17% of the network will fall in the "Poor" and "Very Poor" category.

As a minimum, we suggest that the City of Seal Beach consider increasing pavement expenditures to achieve the following objectives:

- To preserve and improve pavements in the "Good" category
- Reduce the percentage of pavements in the "Poor" and "Very Poor" categories
- Maintain the average PCI at 80

## Conclusions

The City has a street system that is in overall "Good" condition with more than half of the streets currently in the "Good" to "Very Good" categories and a network average PCI of 83. Approximately, 19% of the City's street network currently falls into the "Very Poor" to "Poor" categories.

The City has met OCTA's Measure M2 Program requirements for receiving a 10% reduction in the local funding match by maintaining a PCI higher than 75 .

Current funding levels will result in a reduction in the overall PCI to 74 by 2021. This is a concern that needs to be addressed.

## NCE recommends that the City consider:

- Increasing the funding level in order to maintain a current PCI above 75. This will allow the City to continue to meet OCTA's requirements for receiving a 10% reduction in the local funding match.
- Seek out grants or alternate funds that might be available to supplement existing funding.
- Update the pavement management system as required by OCTA to ensure that Measure M2 funds are not jeopardized.
- As part of the biennial update, the maintenance and rehabilitation (M&R) decision trees and the associated unit costs should be reviewed and updated to reflect new construction techniques/methods as well as changes in costs to keep the budget analysis results reliable and accurate. At the same time, any M&R activities should be updated in the City's database biennially.



## INTRODUCTION

The City of Seal Beach has utilized a Pavement Management Program (PMP) to manage its street network since 2004. The first PMP software used was the StreetSaver® program, but in 2010, the City converted to the MicroPAVER software to be compliant with the requirements of the Orange County Transportation Authority (OCTA). Both programs are similar and rate pavements on a 0-100 Pavement Condition Index (PCI) scale.

Nichols Consulting Engineers, Chtd. (NCE) was selected by the City of Seal Beach to update the City's pavement management system in 2013. The entire network (approximately 41 centerline miles or 214 pavement sections) were surveyed. The surveys were completed in October 2013, and all survey data were entered into MicroPAVER database.

The table below summarizes the lengths and area of the pavement network by functional class:

Functional Class	Sections	Centerline Miles	Lane Miles	Area (sf)
Arterial	21	10.0	40.6	3,721,087.00
Collector	41	8.5	16.1	1,225,365.00
Residential	152	22.7	44.2	3,151,071.00
<b>Totals</b>	<b>214</b>	<b>41.3</b>	<b>101</b>	<b>9,450,856.00</b>

Table 1. Network Summary Statistics by Functional Class

As part of this project, a pavement needs analysis was performed on the pavement network. Four budgetary scenarios were also analyzed.

### Purpose

The main goals were:

1. Updating the existing pavement network and performing condition surveys.
2. Updating historical maintenance, e.g., previously resurfaced pavements.
3. Updating the maintenance and rehabilitation (M&R) decision tree and associated costs.
4. Performing budgetary analysis and determining the funding needs.

The purpose of this report is to assist decision makers in utilizing the results of the MicroPAVER PMP. Specifically, this report links the recommended repair program costs to the City of Seal Beach's current and projected budget alternatives to improve overall maintenance and rehabilitation strategies. This report assesses the



adequacy of existing revenues to meet the maintenance needs recommended, and maximizes the return from expenditures by:

- Implementing a multi-year road rehabilitation and maintenance program;
- Developing a preventative maintenance program; and
- Selecting streets for the most cost effective repairs.

The report describes the overall condition of the City's maintained roads and highlights options for improving them. These options are developed by conducting "what-if" analyses using the MicroPAVER program. The effects of different funding strategies by varying the budget amounts available for pavement maintenance and repair of the City's roads can be demonstrated over the next seven years.

### City's Street Network

The City of Seal Beach was incorporated in 1915 and has been in operation under its own charter since 1964. It covers an area of 11.6 square miles in the western corner of Orange County. The City's total population in 2010 was 24,168. Originally called Bay City, Seal Beach was developed in the early 1900's as a resort destination for residents of the Los Angeles area. Its early growth was accelerated by the construction of the Pacific Electric Railway Trolley, which reached the City in 1906. In 1926, oil was discovered in the City and the oil boom that followed resulted in the development of Seal Beach into the mainly residential community it is today.

The City is divided into several distinct communities, each of which is described in detail in the following paragraphs.

**Old Town** comprises the area south of Pacific Coast Highway (PCH) and Marina Drive, between 1st Street and Seal Beach Boulevard, and was developed in the 1920's. It is the oldest area within the City's corporate limits. High density residential and commercial land uses are prevalent in this area. Large single-family residential lots located directly on the beach are found in the Gold Coast District. The City's mile long beach in Old Town is used for surfing and swimming. The Seal Beach Pier, located at the end of Main Street, provides a regional attraction to the City.

Much of Old Town dates back to the 1920's. The original street network was laid out in a grid formation and constructed of concrete. Over the years, many of these streets have been overlaid with asphalt.

**Bridgeport** is the area located west of PCH, north of Marina Drive and southwesterly of San Gabriel River. It was primarily developed in the 1960's and consists of medium and high density residential land uses.

**Marina Hill** was developed in the 1950's and consists of single-family homes. This area is located north of PCH and west of Seal Beach Boulevard, adjacent to the



southerly edge of the Hellman Ranch property. It is further divided into Marina Hill-North and Marina Hill-South with Bolsa Avenue forming the boundary.

**Surfside**, a colony which was incorporated in the 1960's, consists of single-family homes located on the south portion of Anaheim Bay. Although a gated community, pedestrian and bicycle access to the beach is available.

**Leisure World** covers the portion of the City between Westminster Boulevard and the San Diego Freeway westerly of Seal Beach Boulevard. It was built in 1961. It is a gated retirement community of 600 acres. Leisure World provides a secure, serene environment for seniors 55 and older. Medical, religious, commercial and recreational facilities are all provided within the compound limits.

**College Park East** is a single-family residential area developed in the late 1960's. It is located between the San Diego Freeway and Lampson Avenue, west of the Bolsa Chica Channel in the northeast section of the City. Streets within this community were constructed in the late sixties. The original thickness of the asphalt concrete was only 2 inches over poor underlying soil and too thin to accommodate the traffic loads.

**College Park West** is a small neighborhood bordering Long Beach. It is located in North West of the City. Its streets are named after colleges.

### Private Streets

The following neighborhoods have private streets and are maintained by an association and no City funds go toward their maintenance.

- Leisure World
- Centex Homes
- Riverbeach Condominiums
- Surfside
- Heron Pointe

### Existing Pavement Condition

As previously noted, the City of Seal Beach is responsible for the repair and maintenance of approximately 41 centerline miles of streets. The surface area of the network is approximately 9.5 million square feet or 1 million square yards. The replacement value of the City's streets is approximately \$87.4 million. (This is the cost to replace the pavement and does not include sidewalk, ramps, curb & gutter etc.)

The Pavement Condition Index (PCI) is a measurement of pavement grade or condition and ranges from 0 to 100. A newly constructed road would have a PCI of 100, while very poor streets would have a PCI of 40 or less.



Table 2 provides pavement condition breakdown by PCI ranges or condition category and summarizes the condition of the network in the City of Seal Beach. A large portion of the City's streets are in "Good" or "Very Good" condition category, as shown in Figure 1. Table 3 provides the pavement condition by Functional Class.

Pavement Rating	PCI Range	% of Pavement Area	Description of Pavement Condition
<b>Very Good</b>	86-100	67.7%	The pavement is new or almost new and will not require significant improvement for some time, but may require localized minor repairs. The pavement is structurally sound and has very little or no roughness.
<b>Good</b>	75-85	10.0%	The pavement is in good shape but has some surface defects indicating the need for routine maintenance. The pavement is generally structurally sound and has only minor roughness.
<b>Fair</b>	60-74	3.4%	The pavement has a fair number of defects such as cracking, material loss, depressions, etc. indicating the need for maintenance or repair. The pavement is beginning to become structurally deficient and may have noticeable roughness.
<b>Poor</b>	41-59	7.6%	The pavement has significant defects such as major cracking, significant surface distortions and material loss indicating a need for rehabilitation (i.e. structural improvement). The pavement is structurally deficient and has noticeable roughness.
<b>Very Poor</b>	0-40	11.3%	The pavement has major defects indicating the need for major rehabilitation or reconstruction. The pavement is structurally inadequate.

**Table 2. Percent of Pavement Area by Condition (2012)**



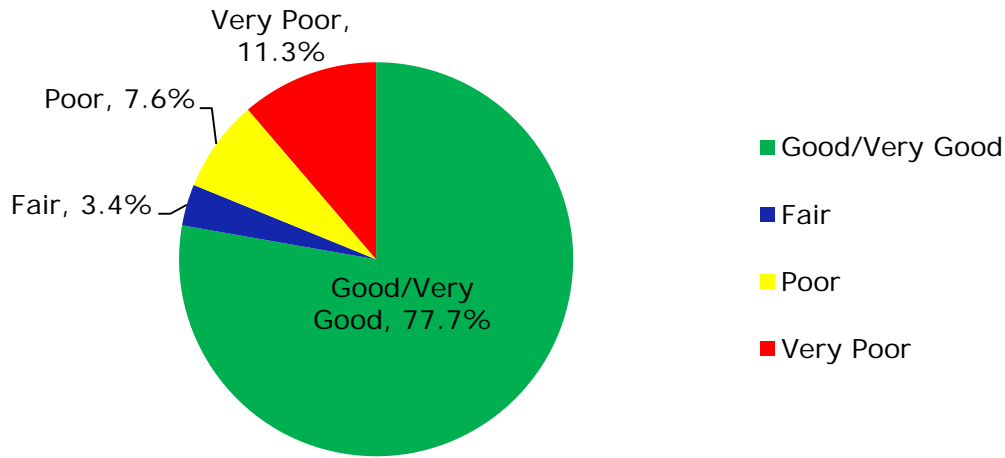


Figure 1. Current Pavement Condition by % of Network Area

Functional Class	Average PCI (weighted by area)
Arterial	75
Collector	84
Residential	91
<b>All</b>	<b>83</b>

Table 3. Pavement Condition by Functional Class (2014)

The City of Seal Beach’s current weighted average PCI for roadways is 83 or in the “Good” condition category. The weighted average is determined as follows:

$$PCI_a = \frac{\sum_{i=1}^N (PCI_i \times A_i)}{\sum_{i=1}^N A_i}$$

Where

- $PCI_a$  = area weighted average PCI of pavement network
- $PCI_i$  = PCI of pavement section number i
- $A_i$  = area of section number i
- $N$  = total number of section in City’s network



The street inventory and PCI report is included in Appendix A. A summary of the maintenance and rehabilitation history is included in Appendix B.

Table 4 summarizes the condition of the road network from 2004-2014. The percentages of pavements in good and very good condition have significantly increased since 2008. Conversely, the percentage of pavements in poor to very poor condition has gradually decreased over time.

Condition Category	PCI Range	Percent of Network Area				
		2006	2008	2010	2012	2014
Very Good	86-100	54%	41%	69%	69%	68%
Good	75-85	7%	20%	6%	11%	10%
Fair	60-74	16%	17%	8%	5%	3%
Poor	41-59	14%	12%	6%	11%	8%
Very Poor	0-40	9%	10%	11%	4%	11%

Table 4. Historical PCI Breakdown (2004-2014)

Table 5 below shows the network average PCI in the past 7 years. As can be seen, the weighted average condition of the pavement network has improved since 2006, with the highest increase from 2008-2012. This is attributable to the significant repairs that have occurred in this period.

Year	2006	2008	2010	2012	2014
Average Network PCI	74	76	84	85	83

Table 5. Network Average PCI (2004-2014)

The Measure M2 Regional Capacity Program - which will provide Measure M2 grant funding for arterial, intersection, and freeway/arterial improvements – includes an incentive for successful implementation of pavement management programs. The incentive is a 10% reduction in local matching fund requirements, if either of the following conditions apply i.e.

- c) Show measurable improvement of paved road conditions during the previous reporting period defined as an overall weighted (by area) average system improvement of one PCI point with no reduction in the overall weighted (by area) average PCI in the Master Plan of Arterial Highways (MPAH) or local street categories;

*or*

- d) Have road pavement conditions during the previous reporting period within the highest 20% of the scale for road pavement conditions in conformance with OCTA Ordinance No. 3, defined as a PCI of 75 or higher.



The City's PCI rating continues to comply with the Measure M2 subparagraph "b" above. Since 2008, the City has maintained a PCI greater than 75. Even though the analysis for this update shows the potential decrease in the overall PCI from 85 to 83, the City will still remain eligible for the 10% reduction in local matching fund requirement.

No two inspectors will arrive at the exact same PCI on a given street segment. There is a level of subjectivity to all survey data collection. As inspection data is gathered by different inspectors there can be small variances to what they see, measure and record. The accepted industry standard deviation for inspected Pavement Condition Index (PCI) numbers is  $\pm 10$  points.



## MAINTENANCE & REHABILITATION STRATEGIES

A variety of Maintenance and Rehabilitation (M&R) strategies may be applied to maintain pavements. They include slurry seals, asphalt concrete overlays and reconstruction, all of which extend the pavement life. The following paragraphs briefly describe the various strategies that are utilized in the City.

**Slurry Seals** are a mixture of slow setting asphalt emulsion, fine aggregate (sand-like), and water. This mixture is spread over the entire pavement surface and is about 3/8" thick. In addition to protecting the asphalt concrete surface and subgrade from water damage, the slurry seal provides a new wearing surface. This type of treatment is analogous to oil changes for a car i.e. necessary maintenance that increases the life of a car (or, in this case, increases the life of the pavement so they do not prematurely require more costly repairs).

**Maintenance Intervals:** A seal coat is applied at regular intervals, usually 5 to 7 years. After several intervals of seal coats, an overlay is typically required to address structural issues. The intervals between overlays and reconstruction depend upon the road classification as well as the original design life. Major roads have higher traffic volumes, speeds, and loads, which increases pavement wear and demand a higher level of service for safety reasons. Every street eventually fails or reaches a point where it is cheaper to reconstruct than to repair.

**Asphalt Concrete (AC) Overlays** typically involves placing 1.5 to 4 inches of asphalt concrete over the existing surface. Overlays are placed when the pavement has deteriorated to a point that a seal coat will not bring the pavement back to an acceptable level of service, usually because of structural inadequacy.

This may be caused by:

- Age
- Climate
- Air & water penetrating the pavement through cracks
- Aggregate base or subgrade soil failures
- Heavier traffic loads than anticipated in the original design

**Reconstruction** involves removing the existing layers of asphalt concrete and base and reconstructing an entirely new pavement section.

### Pay Now or Pay More Later

The PMP is designed to achieve an optimal network PCI somewhere between the low to mid 80's, which brings the network into a "good" condition category. In other words, the system will recommend priority list of maintenance treatments in an attempt to bring all the streets in the City of Seal Beach to a good condition, with the majority of the roads falling in the mid 80's.

The cost to repair and maintain a pavement depends on its current PCI. In the "good" category, preventive maintenance treatments such as slurry seals have



minimal costs. They are applied before pavement deterioration has become severe and usually cost approximately \$0.40/sq. ft. Almost 80% of the City's streets would benefit from these relatively inexpensive, life-extending treatments.

As noted in Table 4, approximately 3% of the City's streets fall into the "fair" condition category. Pavements in this range show some form of distress or wear that require more than a life-extending treatment. The pavements typically require a thin overlay, with costs in the range of \$2.15/sq. ft.

The remaining 19% of the City of Seal Beach's streets fall below a PCI of 60. The City's policies indicate that a thick overlay or reconstruction is the most appropriate treatment. The costs for these treatments range from \$4.40 to \$9.25/ sq. ft.

Figure 2 demonstrates that pavement maintenance follows the old colloquial saying of "pay me now, or pay me more later." History has shown that it costs less to maintain roads in good condition than to repair roads that have failed. By allowing pavements to deteriorate, roads that once cost only \$0.30/sq. ft. to slurry seal may soon cost \$2.08 to \$4.40/sq. ft. to overlay and upwards of \$9.26/sq. ft. to reconstruct.

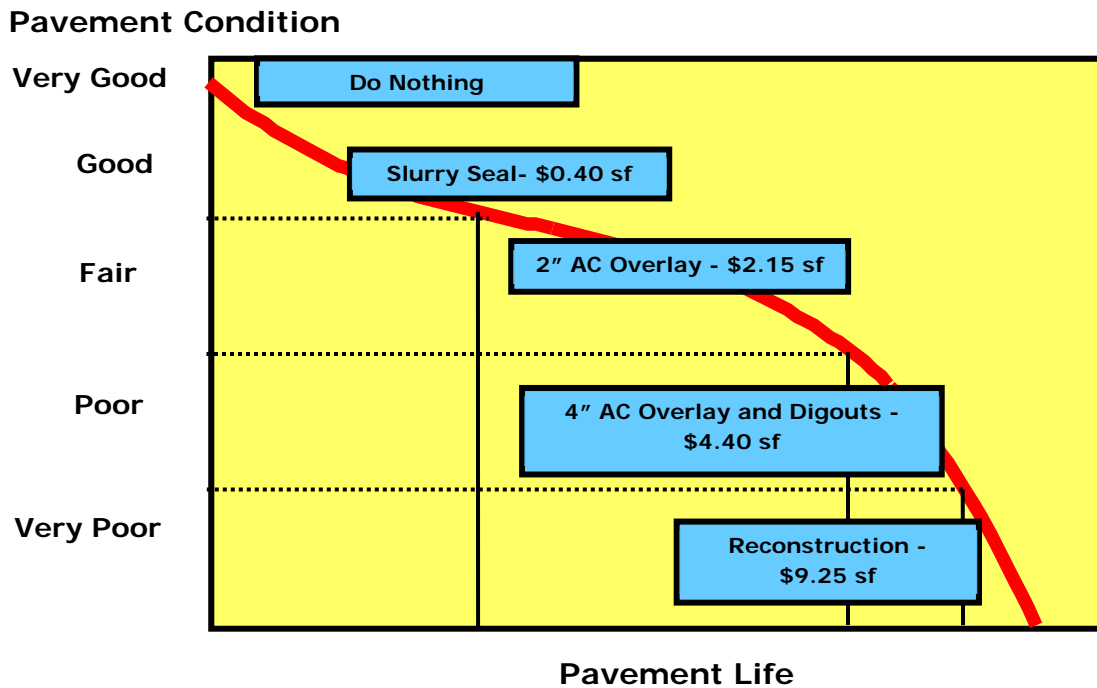


Figure 2. Costs to Maintain Pavements Over Time

One of the key elements of a pavement management repair strategy is to keep roads in the "good" and "fair" categories from deteriorating. This is particularly true for roads in the "fair" range, due to the fact that they are at the point where pavement deterioration accelerates if left untreated.





## Expenditures for Pavement Maintenance

It is estimated that the City of Seal Beach will have funds of \$575,000/year for pavement expenditures for the next seven years. Table 6 summarizes the past and future estimated budget amounts. Three continuing funding programs have been allocated to meet the needs of preventative maintenance and rehabilitation.

- Arterial Rehabilitation Program
- Local Street Rehabilitation Program
- Preventative Program (Slurry Seal)

Year	2010	2012	2014	2016 - 2020
Arterial Rehabilitation (\$ Million)*	0.3	1.13	0.35	0.50
Preventative Program (\$ Million)	0.08	0.1	0.15	0.15
Local Street Rehabilitation (\$ Million)	1.41	1.86	0.4	5.05

**Table 6. Pavement Budgets (2004-2018)**

Note that the City currently has \$575,000 a year budgeted for the seven-year Capital Improvement Program (CIP). This includes \$100,000 for slurry seals, \$200,000 for arterial rehabilitation, and \$275,000 for local rehabilitation. Historically, Seal Beach has been successful at obtaining additional funds and receiving Measure M competitive grants. Therefore, this report assumes that, on average, \$575,000 a year will be spent on paving.

The City has established a seven-year cycle to address the needs of the Preventative Program. Each year the City will be focusing maintenance efforts in a different area of the City. There are many advantages in this strategy. A more cost-effective mobilization from a chosen contractor is the largest monetary benefit. Table 7 shown below reflects the various areas of the City along with the year in which that area is scheduled for treatments.

Year	Zone
1	CPE Phase III
2	CPE Phase IV
3	CPW /Bridgeport
4	Hill/Cove
5	Old Town
6	CPE Phase 1
7	CPE Phase 2

**Table 7. Seven-Year Preventative Program Cycle**



All pavement inspections were completed during the winter months of 2013/2014 and do not reflect the planned or designed work intended to go out to construction during fiscal year 2013/2014. Funds budgeted for construction during the summer of 2014 include approximately \$2,000,000 for Westminster Avenue from Seal Beach Blvd to Bolsa Chica Road along with \$100,000 for local road paving and \$50,000 for slurry seal treatments. Any and all work completed in this current year will be reflected in the next biennial report in 2016. As a result, PCI ratings have decreased slightly since the PMP report in 2014 owing mostly to current fiscal year road paving not occurring before the street network was rated during the winter months of 2013/2014.

## **FUNDING SOURCES**

The following is a discussion of future revenues available to the City for street maintenance.

### **Measure M2 Turnback**

Measure M2 is the ½-cent local retail sales tax approved by voters in November 1990 and renewed in 2006 until 2040. The program will provide \$450 million to local agencies for street maintenance and local traffic improvements. These funds are used alone or in conjunction with other sources to address transportation improvements such as rehabilitation, signals, street widening, etc. The City's share is approximately \$400,000 per year and will be used to fund resurfacing projects.

### **Measure M2 Competitive Grants**

In addition to the Turnback funds, the Comprehensive Transportation Program (CTP) also includes a competitive grant process for projects such as capacity program, signal synchronization and transit. The Arterial Highway Rehabilitation Program (AHRP) will fund projects such as overlays and reconstruction. Eligible expenditures include bike lanes, bus turnouts/pads, and replacement of parking lanes, curbs, gutters, catch basins, curb ramps and some sidewalks. City streets that are included in the Master Plan of Arterial Highway (MPAH) system are eligible.

### **Local Revenues/General Funds**

Local revenues that may be used for street rehabilitation include retail sales tax, redevelopment fees, assessment districts and property taxes. These revenue sources are also used for vital city activities such as police, fire and administrative services.

### **Gas Tax**

California, like the rest of the nation, built its interstate system primarily with federal and state funds derived from per gallon gasoline and diesel fuel excise taxes, commonly called the gas tax. Being a fixed amount, the excise tax needs periodic increases to maintain buying power and to keep up with the effects of inflation, a politically difficult sell. By the 1980's it became apparent that the gas



tax was not keeping up with inflation and that other revenue would be needed to continue to fund transportation improvements.

## BUDGET NEEDS

Based on the principle that it costs less to maintain roads in good condition than bad, the PMP strives to develop a maintenance strategy that will first improve the overall condition of the arterials to an optimal PCI somewhere between the mid and upper 80's, and then maintain it at that level. The average PCI for the City's streets is 85, which is in the "Good" condition category, but there is still a portion of the streets that exhibit load-related distresses. In addition, there is currently a significant unfunded backlog of several million dollars. If these issues are not addressed, the quality of the arterials will inevitably decline. In order to correct these deficiencies, a cost-effective funding and maintenance and rehabilitation strategy must be implemented.

The first step in developing a cost-effective maintenance and rehabilitation strategy is to determine the maintenance "needs" of the City of Seal Beach's streets. Using the budget needs module, maintenance needs over the next seven years were estimated at \$14.9 million. These costs significantly exceed the City's current funding levels of \$4.03 million. If the City of Seal Beach rehabilitated every street within the City, the average PCI will be 87 in 2020. If, however, no maintenance is applied over the next seven years, already distressed roads will continue to deteriorate, and the PCI will drop to 68 by 2020.

The results of the budget needs analysis are shown in Table 8 below. Of the \$14.9 million in maintenance needs shown, approximately \$1.8 million (12 percent) is earmarked for preventative maintenance, while \$13.1 million (88 percent) is allocated for more costly rehabilitation and reconstruction treatments.

Year	2014	2015	2016	2017	2018	2019	2020	Total
PCI with Treatment	97	95	93	90	87	86	87	-
PCI without Treatment	82	80	77	75	72	70	68	-
<b>Budget Needs (\$ million)</b>	<b>11.4</b>	<b>0.4</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>0.1</b>	<b>1.0</b>	<b>1.9</b>	<b>14.9</b>
Preventive Maintenance	5%	80%	-	-	14%	64%	16%	12%
Rehabilitation	95%	20%	100%	100%	86%	36%	84%	88%

**Table 8. Summary of Results from Needs Analysis**

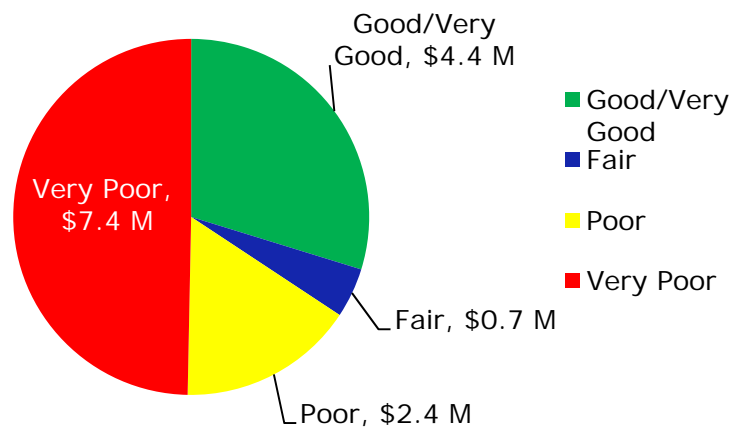
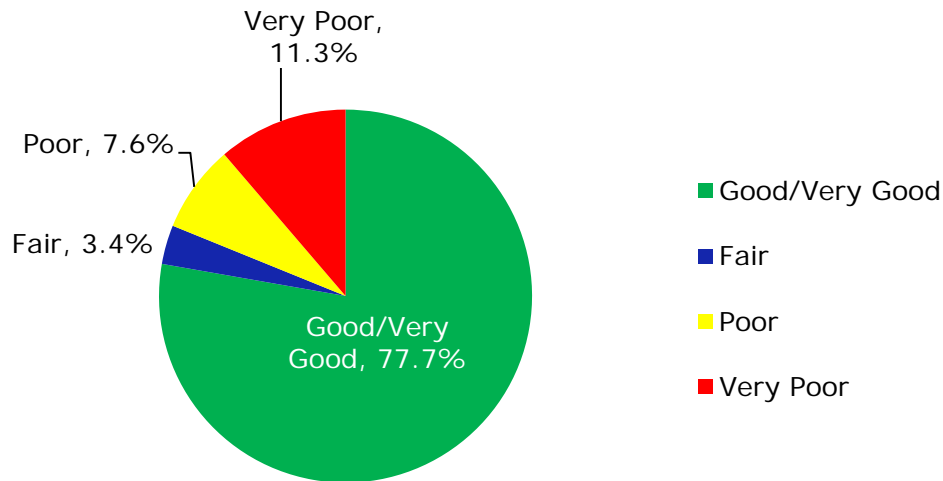


It is important to note that these budgetary numbers have been compiled using current projects as a basis for construction costs. An inflation factor of 3% was used for this analysis.

The cost-effectiveness of preventative maintenance treatments is demonstrated in Figure 3 which compares the current condition of the network and the maintenance needs estimated. The portion of the network in good and very good condition (78% of the City's streets) requires only \$1.8 million over the next seven years, whereas the 22% in the "fair" to "very poor" condition needs approximately \$13.1 million.

**Network Area by Condition**

**Figure 3. Cost Effectiveness of Treatments**





## BUDGET SCENARIOS

Having determined the maintenance needs of the City's street, the next step is to conduct what-if analysis. The program projects the consequences of different scenarios on PCI and unfunded backlog. By examining the effects on these indicators, the advantages and disadvantages of different funding levels and maintenance strategies become clear. The following scenarios were analyzed for this report:

**Scenario 1: Unconstrained Budget** – the total amount for the next seven years and the budget for each year are the same as identified in the budget needs analysis, i.e. \$14.9 million. This scenario will spend \$10.8 million in 2014 to rehabilitate the City's entire pavement. It will improve the condition of the streets to a PCI of 87 by 2020 and eliminate the unfunded backlog.

**Scenario 2: Maintain PCI at 83** - The budget required to maintain the City's streets at a PCI of 83 would be \$10.1 million over the next seven years. In the meantime, the unfunded backlog will decrease from \$8.9 million to \$8.4 million by 2020.

**Scenario 3: Existing Budget** - This scenario illustrates the impacts on the network at the City's current budget of \$4.0 million over seven years. The PCI of the network will deteriorate to 74, and the unfunded backlog will grow from \$5.3 million to \$16.4 million by 2020.

**Scenario 4: Do Nothing** – This Scenario illustrates that a zero budget will increase the unfunded backlog to \$24.1 million after seven years and the pavement condition will deteriorate from a PCI of 83 to 68 by 2020.

Note that the unfunded backlog consists of pavement maintenance that is needed, but which cannot be accomplished due to lack of funding. Shrinking budgets have forced many California cities and counties to defer much-needed road maintenance. By deferring maintenance, not only does the frequency of citizens' complaints about the condition of the network increase, but the cost to repair these roads rises as well.





### Scenario 1: Unconstrained Budget

The total amount for the next seven years and the budget for each year are the same as identified in the budget needs analysis, i.e. \$14.9 million. This scenario will spend \$10.8 million in 2014 to rehabilitate the City's entire pavement. It will improve the condition of the streets to a PCI of 87 by 2020 and eliminate the unfunded backlog.

Year *	2014	2015	2016	2017	2018	2019	2020	Total
Budget (\$M)	11.36	0.37	0.07	0.03	0.13	0.95	1.94	14.86
Rehabilitation (\$M)	10.80	0.07	0.07	0.03	0.11	0.34	1.63	13.08
Preventative Maintenance (\$M)	0.55	0.30	0.00	0.00	0.02	0.61	0.31	1.78
Unfunded Backlog (\$M)	-	-	-	-	-	-	-	
PCI (entire network)	97	95	93	90	87	86	87	

Table 9. Summary of Results for Scenario 1

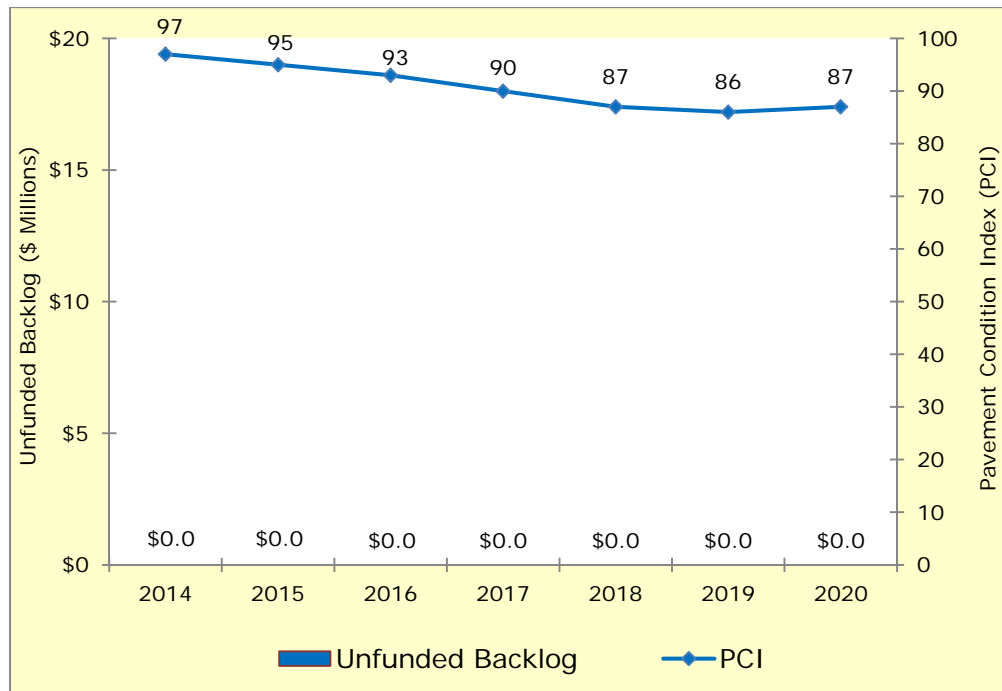


Figure 4. PCI vs. Deferred Maintenance for Scenario 1



### Scenario 2: Maintain the Current PCI of 83

The budget required to maintain the City’s streets at a PCI of 83 would be \$10.1 million over the next seven years. In the meantime, the unfunded backlog will decrease from \$8.9 million to \$8.4 million by 2020.

Year *	2014	2015	2016	2017	2018	2019	2020	Total
Budget (\$M)	2.49	2.49	2.03	0.03	0.13	0.95	1.94	10.08
Rehabilitation (\$M)	1.94	2.19	2.03	0.03	0.11	0.34	1.63	8.29
Preventative Maintenance (\$M)	0.55	0.30	0.00	0.00	0.02	0.61	0.31	1.78
Unfunded Backlog (\$M)	8.86	7.46	6.13	6.69	7.27	7.89	8.44	
PCI (entire network)	87	88	88	85	83	82	82	

Table 10. Summary of Results for Scenario 2

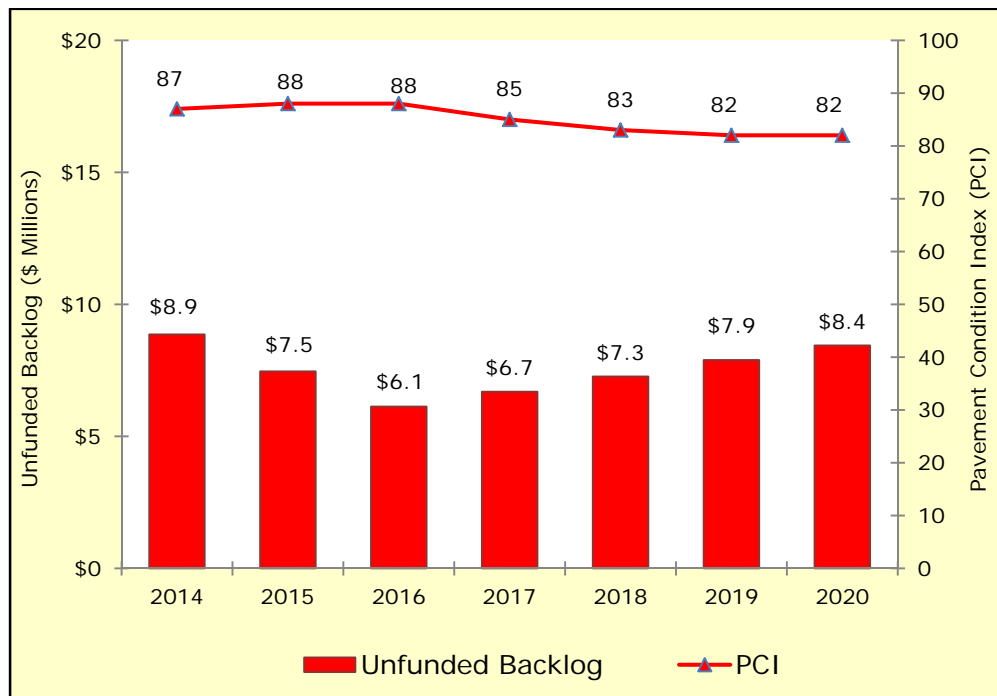


Figure 5. PCI vs. Deferred Maintenance for Scenario 2



### Scenario 3: Existing Budget

This scenario illustrates the impacts on the network at the City's current budget of \$4.0 million over seven years. The PCI of the network will deteriorate to 74, and the unfunded backlog will grow from \$5.3 million to \$16.44 million by 2020.

Year *	2014	2015	2016	2017	2018	2019	2020	Total
Budget (\$M)	0.57	0.57	0.57	0.56	0.57	0.57	0.57	4.0
Rehabilitation (\$M)	0.47	0.47	0.47	0.46	0.47	0.47	0.47	3.3
Preventative Maintenance (\$M)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.7
Unfunded Backlog (\$M)	10.78	11.46	11.86	12.26	12.80	13.67	16.44	
PCI (entire network)	84	83	81	80	78	76	74	
PCI (MPAH)	78	78	76	75	73	71	71	
PCI (Local)	90	89	88	87	85	84	83	

Table 11. Summary of Results for Scenario 3

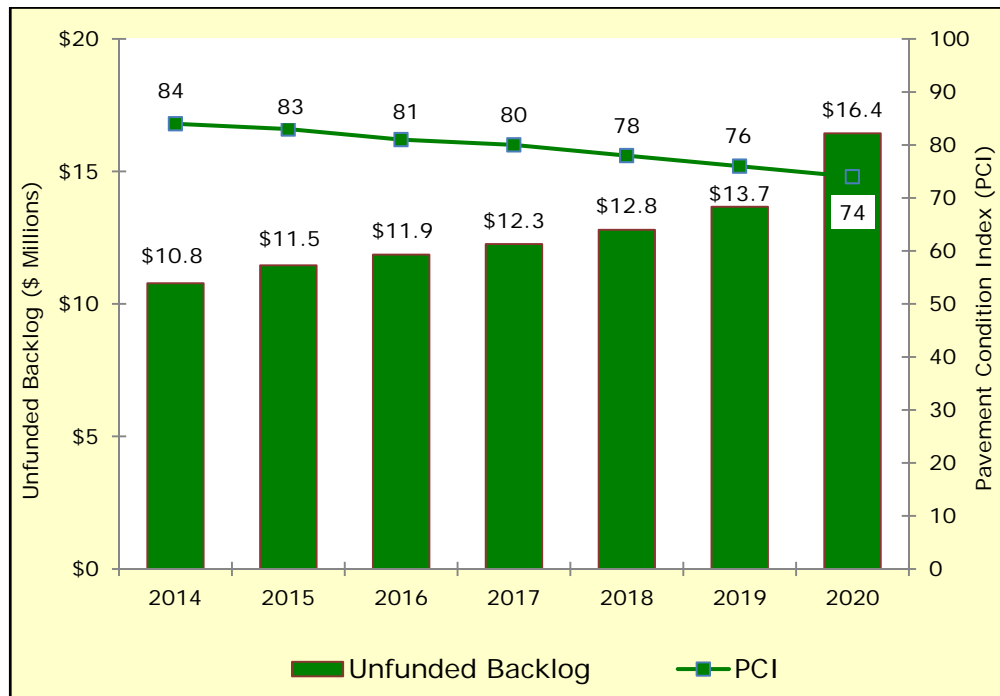


Figure 6. PCI vs. Deferred Maintenance for Scenario 3



### Scenario 4: Do Nothing

This Scenario illustrates that a zero budget will increase the unfunded backlog to \$24.1 million after seven years and the pavement condition will deteriorate from a PCI of 83 to 68 by 2020.

Year *	2014	2015	2016	2017	2018	2019	2020	Total
Budget (\$M)	0	0	0	0	0	0	0	0
Rehabilitation (\$M)	0	0	0	0	0	0	0	0
Preventative Maintenance (\$M)	0	0	0	0	0	0	0	0
Unfunded Backlog (\$M)	11.36	12.89	14.32	15.84	17.66	20.00	24.10	
PCI (entire network)	82	80	77	75	72	70	68	

Table 12. Summary of Results for Scenario 4

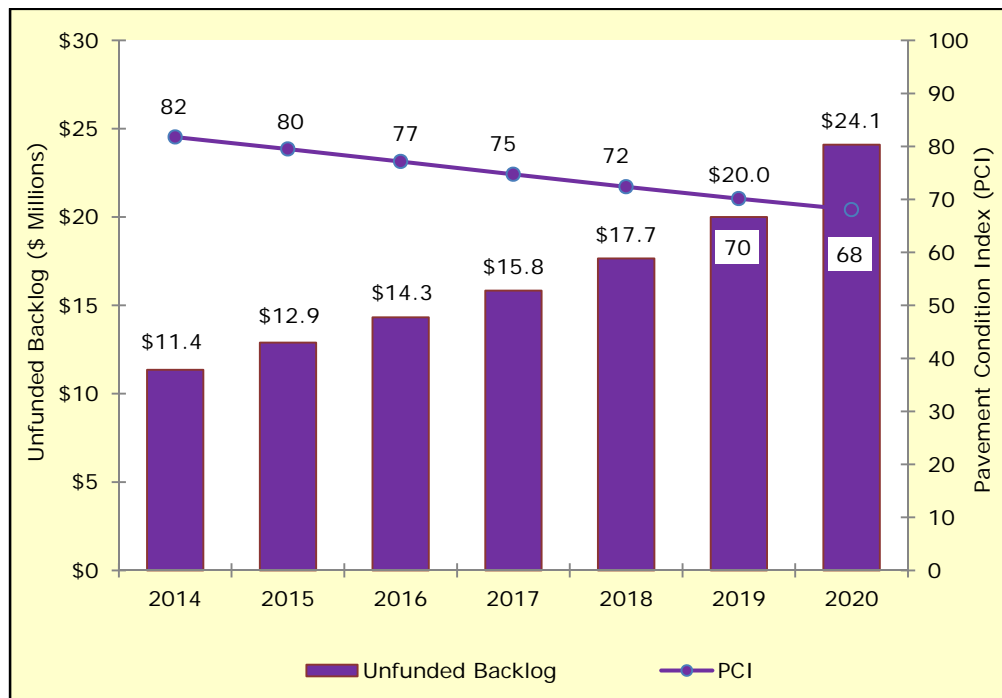


Figure 7. PCI vs. Deferred Maintenance for Scenario 4



Note: chart below defines the Budget years shown in the preceding Scenarios.

YEAR *	FISCAL YEAR
2014	2014/2015
2015	2015/2016
2016	2016/2017
2017	2017/2018
2018	2018/2019
2019	2019/2020
2020	2020/2021

## SUMMARY

Figure 8 illustrates the change in PCI over time for the different budget scenarios. Note that in the unconstrained funding scenario, the PCI will reach 87 after seven years. This is due to the cyclical nature of preventative maintenance treatments that are applied once every 5 to 7 years. By comparison, the existing budget will result in a drop of the PCI to 74 by 2020.

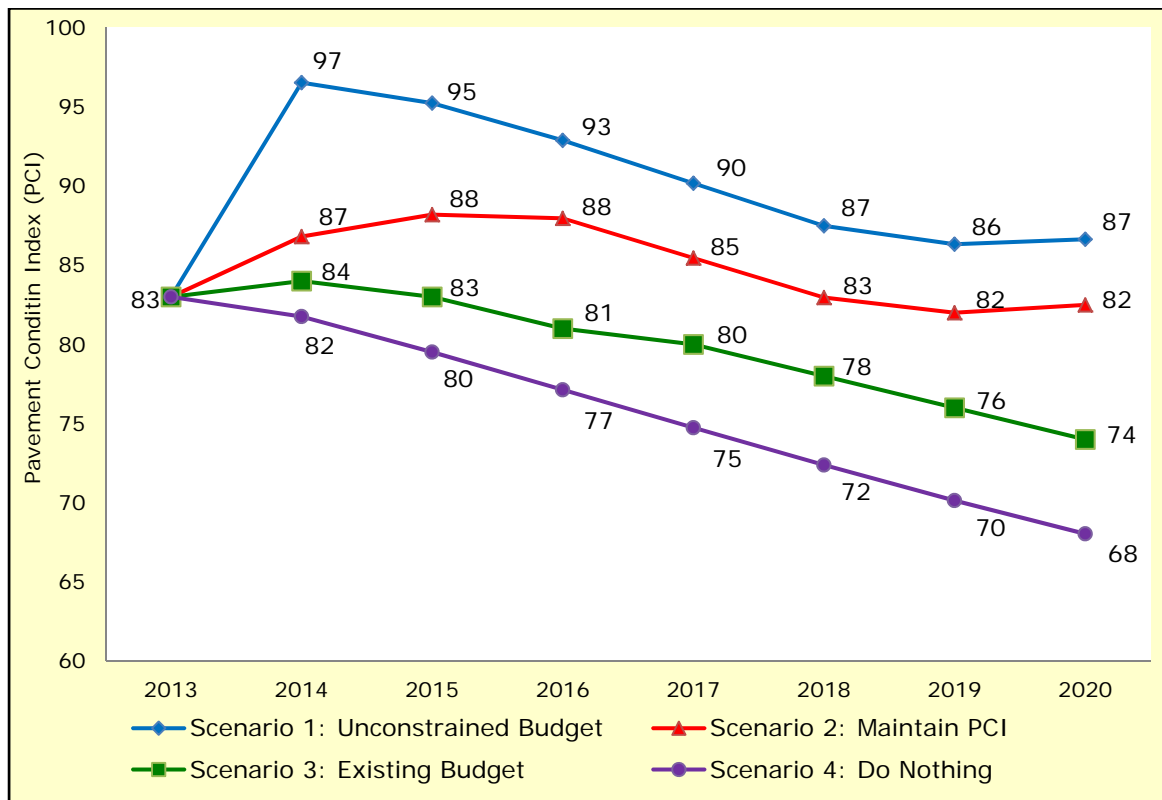


Figure 8. Pavement Condition by Scenario by Year



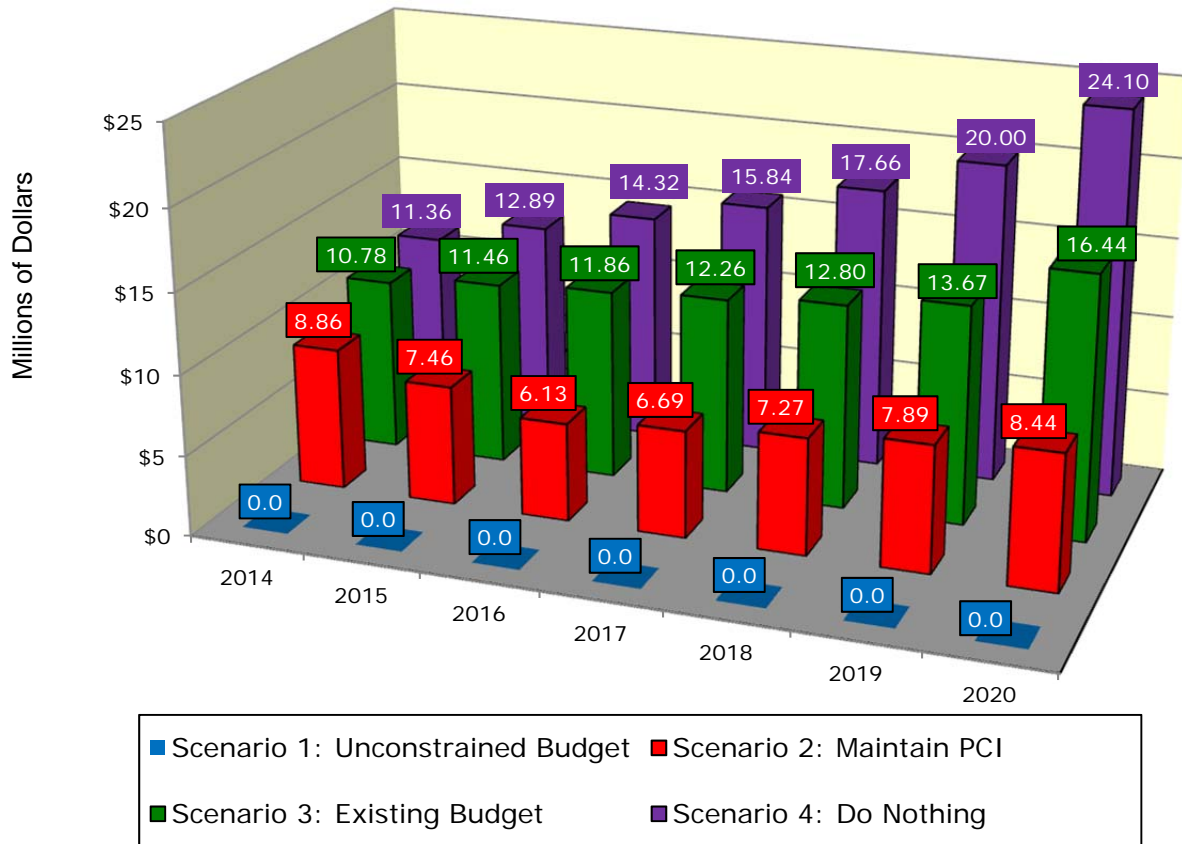


Figure 9. Deferred Maintenance by Scenario by Year

Figure 9 illustrates the change in unfunded backlog over time for the different budget scenarios. Note that the unconstrained budget has no unfunded backlog.

Figure 10 (next page) illustrates the change in the percentage of the road area with each condition category for the different budget scenarios. With Scenario 3 (Existing Budget), the “Very Poor” category increases to 12% from the current 11%. But with \$10.1 million for the next seven years (Maintain PCI at 83), the “Good” and “Very Good” category increase to 92% from the current 78%.

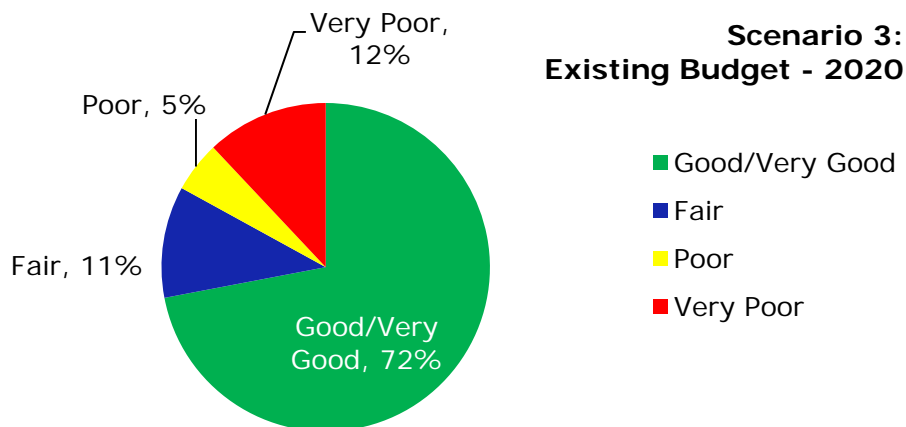
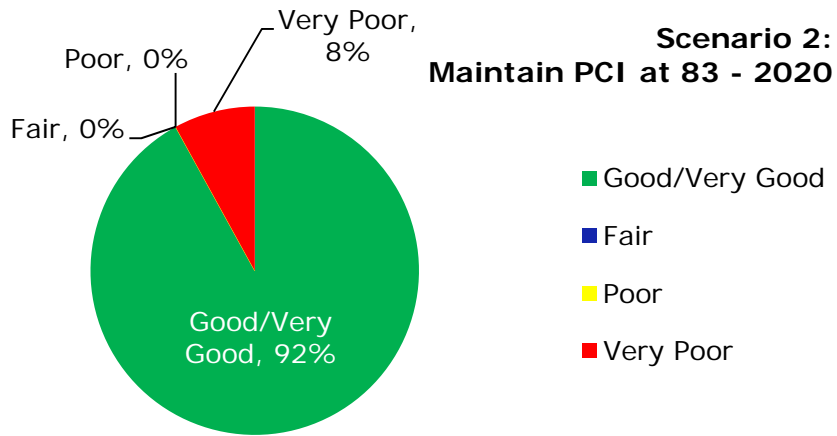
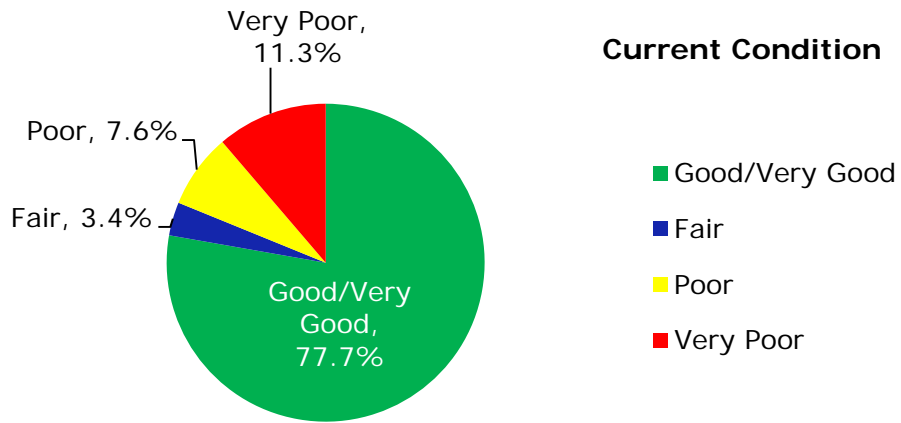


Figure 10. Percentage of Road Network Area of Each Condition Category for Different Budget Scenarios



## CONCLUSIONS

The City of Seal Beach has a substantial investment in their street network as evidenced by the replacement cost of approximately \$109.2 million. The network average PCI of the City is 83. Overall, 78% of the City's street network is in the "Good" and "Very Good" condition category. In the meantime, about 19% of the streets are in "Poor" or "Very Poor" condition category. This requires a significant amount of money to bring them into the "Good" condition category.

If sufficient funding is unavailable for street maintenance, the average PCI of the network is expected to decrease and the unfunded backlog will increase. The higher backlog will result in increased future costs as more capital intensive treatments (such as reconstruction) will be necessary as streets are deferred where less expensive treatments (such as surface seals or overlays) are currently feasible.

Our analysis indicates that the City needs to spend \$14.9 million in pavement maintenance and rehabilitation in the next seven years in order to eliminate the unfunded backlog and maintain the PCI at its current level. By doing so, many streets then can be maintained in good condition with on-going preventive maintenance. This will eventually save money by avoiding reaching the level of major rehabilitation (such as reconstruction) until the end of the pavement's service life.

### a. Pavement Funding

The City's current budget for pavement maintenance and rehabilitation is \$4.0 million for the next seven years. At this funding level, the network average PCI is expected to decrease from the current level of 83, which is in "Good" condition category, to 74, which is a borderline "Good" and "Fair" condition category.

As a minimum, we suggest that the City of Seal Beach consider increasing pavement expenditures to achieve the following objectives:

- To preserve and improve pavements in the "Good" category
- Reduce the percentage of pavements in the "Poor" and "Very Poor" categories
- Increase funding to not allow the PCI to drop below 75

Should the City allow the pavement condition to fall below the projected PCI of 75, it will no longer be eligible for the 10% reduction in matching funds.

It should be noted that a significant unknown is the future cost of rehabilitation; with the recent volatility in oil prices, we would recommend that the City carefully monitor future construction costs and be ready to adapt to large increases if necessary. The graph below illustrates the changes in the Asphalt Price Index (source: Caltrans) since 1999. As can be seen, asphalt prices have been extremely volatile since 2010.

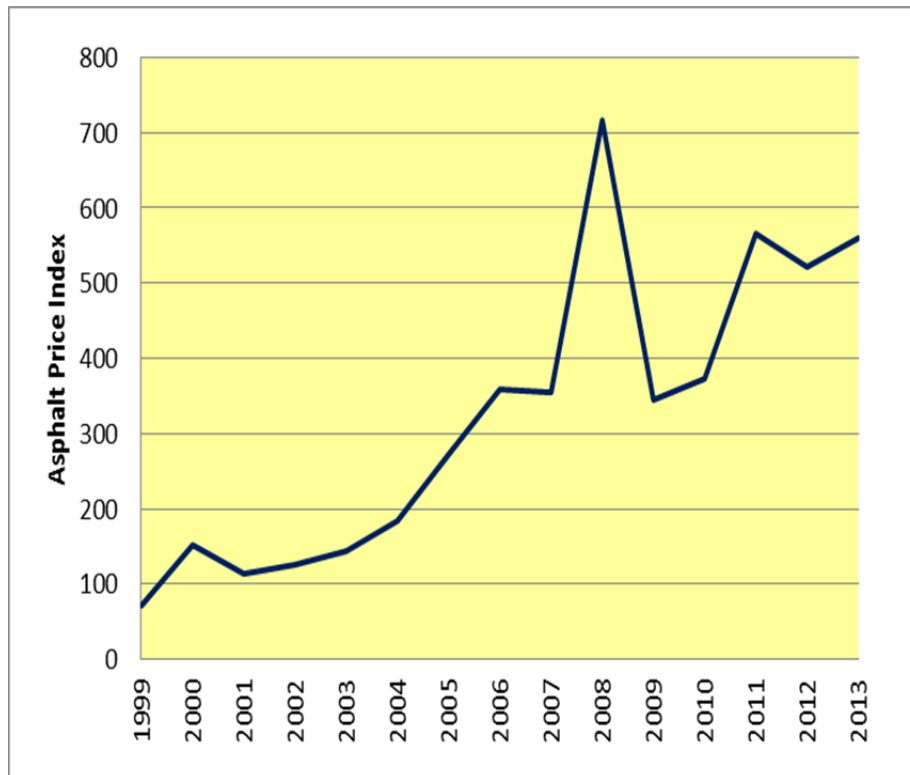


Figure 11. Asphalt Price Index (1999-2013, Caltrans)

In light of the substantial financial commitment that is required to maintain and/or improve road conditions and the increase in construction costs, it is relevant to discuss the various possible financing alternatives to help fund pavement rehabilitation and preventative maintenance for the City. The following alternatives are some of the possible ways that the City should consider to generate additional revenue to fund needed rehabilitation and maintenance of City maintained roads.

- 1) Truck Route Permit Fee – Leverages a surcharge fee on trucks for use of City streets to help recoup the costs of heavy wheel loads imposed by truck traffic.
- 2) Residential Waste Collection Fee – Surcharge is leveraged on waste companies to account for damage to pavement incurred by heavy waste collection trucks.
- 3) Development Repairs – Fees assessed to new developments to account for increased traffic associated with new residential and commercial tenants.
- 4) Establish Utility Cut Impact Fee – Fee is leveraged against utility to provide compensation for reduced pavement life due to utility cuts and patches.
- 5) Pursue local transportation sales tax measure
- 6) Devote more revenues to street maintenance
- 7) Establish Downtown or Business Improvement Districts
- 8) Establish Citywide Assessment Districts



## **b. Pavement Maintenance Strategies**

The City's pavement maintenance strategies include slurry seals, overlays and reconstruction. It is tempting to invest in the worst streets and only fund overlay or reconstruction projects. However, it is equally important to preserve good pavements. Crack sealing, one of the least expensive treatments, can keep moisture out of pavements and prevent the underlying aggregate base from premature failures. Surface seals are also cost-effective for pavements currently in good condition. Therefore, we recommend that the City continues its preventive maintenance program to preserve the good pavements.

In addition, other strategies such as cold-in-place recycling or full depth reclamation should be considered when considering rehabilitation treatments. These may save the city significant amounts over more conventional treatments.

## **c. Maintenance and Rehabilitation Decision Tree**

The maintenance and rehabilitation decision tree and the associated unit costs should be reviewed and updated annually to reflect new construction techniques/repairs and changing costs so the budget analysis results can be reliable and accurate.

## **d. Pavement Management Program Update**

OCTA requires cities submitting pavement rehabilitation projects for Measure M2 funding to utilize a PMP. This includes updating the condition for all Arterial / MPAH streets every two years, and non-arterial streets every six years.

We recommend that the City of Seal Beach comply with the above requirements so as not to jeopardize any local transportation funds. This is particularly critical since significant funding increases are needed to maintain the pavement network in "good" condition.



# Appendix A



# Pavement Management Program Certification

January 7, 2014

## RENEWED MEASURE M LOCAL PAVEMENT MANAGEMENT PLAN CERTIFICATION

The City of Seal Beach certifies that it has a Pavement Management Plan in conformance with the criteria stated in the Orange County Local Transportation Authority Ordinance No. 3. This resolution requires that a Local Pavement Management Plan be in place and maintained to qualify for allocation of revenues generated from Measure M.

The system was developed by Nichols Consulting Engineers, Chtd. using the \*MicroPAVER compatible pavement management system, and contains, at a minimum, the following elements:

- Inventory of MPAH and local routes reviewed and updated biennially. The last update of the inventory was completed 2013 for Arterial (MPAH) roads and 2013 for local roads.
- Assessment of pavement condition for all routes in the system, updated biennially. The last field review of pavement condition for MPAH and Local streets was completed 2012.
- Percentage of all sections of pavement needing: Preventative Maintenance 56%, Rehabilitation 37%, Reconstruction 7%.
- Budget needs for preventative maintenance, rehabilitation and/or reconstruction of deficient sections of pavement for:  
Current Biennial Period \$51.9 M(MPAH)/\$39.4 M(Local),  
Following Biennial Period \$0.3 M(MPAH)/\$0.2 M(Local) .
- Funds budgeted or available for Preventative Maintenance, Rehabilitation and/or Reconstruction.  
Current Biennial Period \$1.15M (MPAH/Local) ,  
Following Biennial Period \$1.15M (MPAH/Local).

The Local Pavement Management Plan is consistent with countywide pavement condition assessment standards as described in the OCTA Countywide Pavement Management Program Guidelines adopted by the OCTA Board of Directors on May 24, 2010.

\* An electronic copy of the Local Pavement Management Plan with MicroPAVER compatible files must be submitted with the certification statement.

A copy of this certification is being provided to the Orange County Transportation Authority.

**Submitted by:**

Local Jurisdiction  
City of Seal Beach

Type Name  
Michael Ho, P.E.

Title  
City Engineer

\_\_\_\_\_  
Signed

## Appendix B

# QC/QA Plan

**The contents of this report is the confidential property of Nichols Consulting Engineers, Chtd. (NCE) and should not be copied, modified, retransmitted, or used for any purpose except with NCE's written authorization.**





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Appendix A - Resumes of Field Inspectors





## City of Seal Beach 2013-14 Pavement Management Program Update Quality Control Plan

### 1. INTRODUCTION

When performing data collection in any field, the need for quality control is paramount. This need for quality data is essential for accurate planning, analysis and design. NCE's "Quality Assurance Management Plan" (QAMP) affirms that:

*"NCE is dedicated to achieving technical and management excellence and to delivering professional engineering and environmental services that meet or exceed our clients' needs. NCE's Quality Assurance (QA) Program is designed to achieve these goals. This QA Management Plan (QAMP) describes NCE's QA Program, which is based on four principles: client satisfaction, employee participation, problem prevention, and continuous quality improvements."*

NCE's QAMP establishes minimum quality standards for performance and procedures for assuring that our clients receive quality service. It requires the participation of employees at every level. It encourages Project Managers and technical staff to take pride in their work and responsibility for ensuring that the work is done correctly the first time. The program is designed to reduce the incidence of problems related to quality and results in implementation, where necessary, of corrective actions and modification of work procedures to minimize the incidence of future problems.

NCE has also prepared detailed and specific Quality Control Plans for projects, and the most notable example is for the **Long Term Pavement Performance (LTPP) – Western Regional Support Contract** for the Federal Highway Administration. This is a 150 page document that covers data collection on highways, including deflection, profile, pavement distresses, traffic, maintenance and rehabilitation history, materials testing and sampling as well as a document control.

#### 1.1 Objectives

This document constitutes a formal Quality Control Plan (QCP) for the City of Seal Beach. The focus is on data collection issues as part of the pavement management update.

Specifically, it is intended for the 2013/2014 Pavement Management Update. The focus is on the collection of network-level pavement distress data (defined by NCHRP Synthesis 401 *Quality Management of Pavement Data Collection*, as "Network-level data collection involves collection of large quantities of pavement condition data, which is often converted to individual condition indices or aggregated into composite condition indices.")

#### 1.2 Structure

The following components are addressed in this QC Plan:

- Condition survey procedures used
- Accuracy required for data collection
- Inspector qualifications and experience
- Safety







## 1. QUALITY CONTROL PLAN

### 1.1. Condition Survey Procedures

The governing document in performing condition surveys for the City of Seal Beach is ASTM D6433-09 “Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys.” Both asphalt concrete (AC) and Portland cement concrete (PCC) pavements are included in this protocol. The following distresses are collected for each pavement type.

#### **Asphalt Concrete (AC) Pavements**

1. Alligator (fatigue) cracking
2. Bleeding
3. Block cracking
4. Bumps and sags
5. Corrugation
6. Depression
7. Edge cracking
8. Joint reflection cracking
9. Lane/Shoulder drop off
10. Longitudinal and transverse cracking

11. Patching and utility cut patching
12. Polished aggregate
13. Potholes
14. Railroad crossing
15. Rutting
16. Shoving
17. Slippage cracking
18. Swell
19. Weathering
20. Raveling

#### **Portland cement concrete (jointed)**

1. Blowup/Buckling
2. Corner Breaks
3. Divided slab
4. Durability (“D”) cracking
5. Faulting
6. Joint seal damage
7. Lane/shoulder drop off
8. Linear cracking
9. Patching (large) and utility cuts
19. Spalling (joint)

10. Patching (small)
11. Polished aggregate
12. Popouts
13. Pumping
14. Punchout
15. Railroad crossing
16. Scaling, map cracking and crazing
17. Shrinkage cracks
18. Spalling (corner)

Any exceptions to the above procedures will be discussed with the City before any surveys are performed. These are usually related to distresses or situations that are not covered in the manuals. Examples include slippage cracks, roller check marks or edge cracking on streets with no curbs and gutters. Others include the use of seals or open-graded asphalt concrete mixes. Any modifications will be documented and submitted to the City for approval.

All distress or condition surveys are performed as walking surveys, and a minimum 10% sampling rate is utilized. Field crews are typically composed of a one-person crew teaming up when required for higher volume facilities such as arterials. The sample units for this project will be based upon the length and





**City of Seal Beach  
2013-14 Pavement Management Program Update  
Quality Control Plan**

width of the street sections. This data will be collected to match the existing management sections of MicroPAVER.





## 1.2. Accuracy Required For Data Collection

The accuracy required for data collection has two components, both of which are further described in the following paragraphs.

- Re-inspections
- PCI comparisons with past surveys

### 2.2.1 Re-Inspection “Check”

At least five percent of all inspections are randomly re-inspected by other team members. A different inspector will review these sites and determine the revised pavement distress measurements. If the initial inspection is determined to be inaccurate, the original inspector is given refresher training before being allowed to continue with any further inspections. Should the data be inaccurate for a certain day, all the data for that day will be re-inspected following refresher training to ensure accuracy.

#### Acceptability Criteria

At the time of re-inspection, the actual distresses will be re-inspected and verified, and any corrections made, if necessary. Distress types and severities must be the same and re-measured quantities within  $\pm 10\%$  of the original measured quantity.

If corrections are required on more than 10% of the re-inspected sample units, then an additional 5% will be re-inspected. This will continue until all more than 95% of the re-inspected sections meet the acceptability criteria.

### 2.2.2 PCI Comparison with Past Surveys

As another level of quality control, the new PCIs are compared with the previous PCIs. If they differ by more than  $\pm 10$  PCI points, these sections are automatically flagged for further investigation.

#### If PCI is +10 points:

The section is investigated to see if a maintenance and rehabilitation event has occurred since the last survey, but which has not been recorded. This can only be resolved with feedback from the City. Typically, it may include activities such as:

- Crack sealing activities – changes medium or high severity cracking to low severity
- Patching activities - alligator cracking that has been removed and patched, so that the resultant PCI is increased.
- Surface seals
- Overlay





## City of Seal Beach 2013-14 Pavement Management Program Update Quality Control Plan

Therefore, an up to date maintenance and rehabilitation history file in the MicroPAVER database is desirable, both for historical accuracy as well as to provide additional quality control.

### If PCI is -10 points

The section is checked to see if the average deterioration rate (usually 3 to 4 points per year) is exceeded. If the drop in PCI is within the range of what is acceptable, no further action is required. If the drop is more than the acceptable range, a re-inspection will be performed. The default performance curves in the MicroPAVER program form the basis for what is acceptable.

### **1.3. Inspectors' Qualifications and Experience**

All NCE's inspectors are required to attend formal training on condition distress surveys. For example, any of NCE's inspectors working on the LTPP project are required to attend a week-long training workshop every year to maintain their certifications. The Regional Transportation Commission (RTC) of Washoe County requires inspectors to be calibrated prior to performing any work using the ASTM D 6433 protocols (also known as the MicroPAVER surveys).

For MicroPAVER (or ASTM D6433) surveys, NCE's technicians underwent the OCTA technician certification exercise held in March 2012.

Similarly, in agencies that use the StreetSaver system, NCE's inspectors attend the distress training conducted by the Metropolitan Transportation Commission (MTC). After the formal training, they work with an experienced inspector before they are allowed to work on their own. Within the first month of working on their own, up to 20% of their work is checked weekly. Any necessary corrections are made immediately.

Finally, NCE conducts a one-day training and calibration workshop for all NCE staff involved with data collection. This is conducted once a year.

Inspector Name	Date of ASTM D-6433 Training	Training Conducted by:
<b>Franc Escobedo</b>	October 7, 2013	Lisa K. Senn
<b>Marvin Mann</b>	October 21, 2013	Lisa K. Senn
<b>David Bivins</b>	October 21, 2013	Lisa K. Senn

Resumes of technicians utilized on this project are included in Appendix A.





### 3. SAFETY PROCEDURES

NCE administers a health and safety program in compliance with the Nevada Occupational Safety and Health act (Section 618.383) and Cal OSHA Title VIII, Section 3203. The program is documented in NCE's *Workplace Safety Program Manual*.

Generally, the safety procedures include:

- Inspectors to wear a Class 2 safety vest at all times;
- Flashing beacon on all vehicles utilized for surveys; and
- Stopped vehicles to be parked at locations away from moving traffic e.g. nearby parking, shoulders etc.

On streets where there is a high volume of traffic or high speeds, additional measures may be necessary, such as:

- Surveys to occur during off-peak periods or on weekends;
- Additional inspector to watch out for traffic; and
- Traffic flaggers in extreme cases.

In extreme cases where it is not possible to walk on the pavement surface, surveys will be performed from sidewalks or raised medians. However, this is extremely rare for city or county roads/streets; this is most often encountered on state highways, and lane closures are the most likely option at this point.





**City of Seal Beach  
2013-14 Pavement Management Program Update  
Quality Control Plan**

## **Appendix A**

### **Resumes of Field Inspectors**



**Lisa K. Senn**  
**Senior Project Manager**

Ms. Senn is a Senior Project Manager and has responsibility for the day to day management of NCE's Southern California office. She has 15 years of experience on a wide range of pavement management and transportation projects.

Ms. Senn has managed Pavement Management System (PMS) projects and has been responsible for the field training of all PMS personnel, overseeing field surveys and QC procedures for various cities and counties throughout California. She has trained engineers and technicians on both StreetSaver® or MicroPAVER. In addition, she has conducted training on various aspects on pavement management.

Currently, Ms. Senn is developing the MicroPAVER training workshops for OCTA which will be conducted in January 2014 through November 2014. This includes both the computer training as well as field distress training. She will also be responsible for conducting the workshops. Ms. Senn is also preparing for the annual training for the City of Woodland. This training covers re-fresher distress training and computer training on StreetSaver®.

Ms. Senn is an active member of MTC's Software Development team and has assisted with beta testing of new modules and enhancements for StreetSaver®.

**Education**

A.A., Business Administration, 2000  
 Cuesta College

**Affiliations**

American Public Works Association

**Registrations and Certifications**

MicroPAVER Level 1 & 2, 2012

**Joined NCE**

2011

**Total Years of Experience**

15

**Pavement Management**

Ms. Senn is responsible for the analysis and quality control of pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports. She has developed the most cost-effective maintenance treatments and strategies, prepared custom multiple-year detailed street maintenance plans and budget option reports, and linked GIS maps with management sections in the client's PMP database. She is also an advanced user of both the MicroPAVER and StreetSaver® pavement management software. Her clients include the following cities and counties:

- |              |                 |                   |               |
|--------------|-----------------|-------------------|---------------|
| Calabasas    | Lompoc          | Petaluma          | Ventura Co.   |
| Calistoga    | Los Altos Hills | Pismo Beach       | Santa Clarita |
| Camarillo    | Los Gatos       | Pittsburg         | Sebastopol    |
| Chula Vista  | Milpitas        | Rocklin           | Stanton       |
| Corona       | Mission Viejo   | San Carlos        | St. Helena    |
| Danville     | Napa            | San Diego         | Thousand Oaks |
| Fullerton    | Oakley          | San Mateo         | Vacaville     |
| Galt         | Orange, City    | San Ramon         | West Covina   |
| Grover Beach | Orange Co.      | Santa Barbara     | Windsor       |
| La Habra     | Oxnard          | Santa Barbara Co. | Woodland      |
| Lathrop      | Pacifica        | Sonoma Co.        |               |



## Representative Projects

### **Corona, CA** | *Project Manager*

Corona, CA

Ms. Senn has managed the City's annual PMS updates which included pavement condition surveys and budgetary analysis. In 2012 & 2013, Ms. Senn assisted the County as they made a change in their PMS software, from MicroPAVER to StreetSaver®. This included a review of current functional classifications, generating a list of roads needing surveys prior to conversion and helping to define information migrated. She collaborated with City's GIS department to obtain a current shapefile for GIS integration for StreetSaver®. Once complete, Ms. Senn trained with City staff on the use of StreetSaver® including database entry and how to generate GIS Maps.

### **County of Orange, CA** | *Project Manager*

Orange County, CA

Ms. Senn is the project manager for the current 3 year contract with the County of Orange in its contract Cities of Lake Forest and Dana Point. She set requirements for quality control of collected pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports. She works closely with Cartegraph who is contracted data collection for roads and non-pavement asset collection. Ms. Senn will be working with County and City staff for determining unit costs, applicable treatments for the 7 year budgeting scenarios and developing the respective street sections that will be rehabilitated over the next 7 years.

### **Mission Viejo, CA** | *Project Manager*

Mission Viejo, CA

The City has approximately 178 centerline miles of local and collector streets and 52 miles of arterial highways (approximately 1,082 pavement sections). Ms. Senn has managed a number of the recent biennial updates the City has completed on its streets. Surveys were done with either 'walking surveys' or 'windshield surveys' and its MicroPAVER database was updated with the pavement condition data. Pavement maintenance and rehabilitation historical records for the past 2 years were also entered into the database. As part of the project, the maintenance and rehabilitation (M&R) decision tree was updated with new treatments and unit costs re-evaluated prior to performing any budgetary analyses. In addition, the City's projected 20-year pavement budget was analyzed and a 7-year work plan prepared. Numerous custom reports were prepared for the City, and finally, an executive summary was submitted to OCTA for the Measure M2 program.

### **Fullerton, CA** | *Project Manager*

Fullerton, CA

Ms. Senn is the project manager for the City's biennial pavement management condition surveys and budget analyses. The condition surveys cover the City's entire pavement network, over 290 centerline miles. Ms. Senn worked with the City to update preventative maintenance and rehabilitation strategies and treatment unit costs to more accurately reflect the effects of different multiple-year budgets on the pavement network's condition and the backlog of work. She also coordinated the migration of the City's GIS shapefiles to MicroPAVER in order to provide a visual linkage to sections in the City's pavement network.

### **Chula Vista, CA** | *Project Manager*

Chula Vista, CA

The project included an update the City's pavement management condition surveys and budget analyses. The condition surveys covered the City's entire pavement network, over 440 centerline miles. Ms. Senn worked with the City to update preventative maintenance and rehabilitation strategies and treatment unit costs to more accurately reflect the effects of different multiple-year budgets on the pavement network's condition and the backlog of work. She also provided training for City staff members for distress collection using the StreetSaver® MobilRater software.

**County of Santa Barbara, CA | Project Manager**

County of Santa Barbara, CA

Ms. Senn has been the Project Manager for all projects with the County since 2003. She helped to define the yearly rotation of roads to be surveyed, managed the survey crews, data entry technicians and QA procedures for the projects. Ms. Senn assisted with the data gathering for the yearly "Road Book", which encompassed the yearly maintenance and rehabilitation projects. In 2010, Ms. Senn assisted the County as they made a change in their PMS software, from MicroPAVER to StreetSaver<sup>®</sup>. This included a review of current functional classifications, generating a list of roads needing surveys prior to conversion and helping to define information migrated. She collaborated with County's GIS department to obtain a current shapefile for GIS integration for StreetSaver<sup>®</sup>.

**City of Woodland, CA | Project Manager**

City of Woodland, CA

Ms. Senn was contracted to train City staff to segment street sections, identify distresses based upon the MicroPAVER's ASTM D6433-11 test method and finally to field review staff's survey sites. She set requirements for quality control of collected pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports.

**City of Santa Barbara, CA | Project Manager**

City of Santa Barbara, CA

In 2009 the City of Santa Barbara brought the PMS operations in house. Previously they had consultants collect distress data and prepare reports but in 2009 that changed. Ms. Senn was contracted to prepare classes to teach the MicroPAVER distress collection and quality control of collected pavement distress data, updating maintenance and rehabilitation decision trees and the treatment unit costs, and the development of budget scenarios and summary reports. She assisted staff on the development of the most cost-effective maintenance treatments and strategies, prepared custom multiple-year detailed street maintenance plans and budget option reports.

**Asset Management**

Ms. Senn has managed the collection of data related to sidewalk, curb and gutter, tree root damage, ADA ramps, cross slopes of street segments, trip fall hazards, culverts, storm drains and catch basins. This included visiting a variety of storm drain features, including manholes, catch basins, streams and curb inlets, and determining the feature's physical characteristics and its connection to other nearby storm drain features. These projects included visiting thousands of feet of concrete and identifying, quantifying and recording them spatially in order to incorporate them on maps for future reference.

**Representative Projects****County of Orange, CA | Project Manager**

County of Orange, CA

In 2012 the County of Orange contracted with NCE for three years. Years one and three were to update the County and its contracting Cities of Dana Point and Lake Forest, PMS databases using semi-automated distress collection. Year two was dedicated to cataloging non-pavement assets for each agency. The mobile data collection units gathered high-resolution 360° degree geo-referenced right-of-way (ROW) street level digital imagery along with 3D point cloud data. The mobile mapping system gave the ability to visualize, measure, edit, and validate infrastructure assets (such as pavements, markings, lanes, surface areas, shoulders, signs, and drainage features) with a high level of accuracy. The assets the County and its contract cities collected were curb & gutter, sidewalk, signalizations, signs, striping, drop-inlets and manhole covers. ArcMAP 10.2 was used to 'drop' points to the various layers of the agencies shapefiles.

### City of Sunnyvale, CA | GIS Coordinator

City of Sunnyvale, CA

In conjunction with their pavement management update also had NCE gather imagery for curb & gutter as well as striping. . The mobile data collection units gathered high-resolution 360° degree geo-referenced right-of-way (ROW) street level digital imagery along with 3D point cloud data. The mobile mapping system gave the ability to visualize, measure, edit, and validate infrastructure assets (such as pavements, markings, lanes, surface areas, shoulders, signs, and drainage features) with a high level of accuracy. ArcMAP 10.2 is used to 'drop' points to the various layers of the agencies shapefiles.

### Pavement Evaluation Services

Ms. Senn managed numerous deflection testing projects. These projects included using deflection testing to measure a pavement's structural properties by applying an load on the pavement and measuring the resulting deflection.

In connection with deflection testing, coring was done to measure existing pavement thicknesses to determine pavement structural capacity. Used in conjunction with deflection testing and visual observations of current cracking conditions and roadside draining, core testing provides the necessary data to provide sound repair or maintenance recommendations.

She was involved in the review traffic patterns to verify the accuracy of traffic indexes. She managed and participated in performing classified truck counts where necessary to determine these indexes.

## Franc Escobedo

### Engineering Field Technician

Mr. Escobedo has over ten years of experience as a pavement management technician for NCE. He has performed numerous pavement condition surveys throughout California and Washington and has collected distress data for various Pavement Management Systems, including the MTC PMS (all versions), MicroPaver, Carte-Graph, and Hansen systems. Mr. Escobedo has completed the MTC "Distress Identification" courses for both Asphalt Concrete and Portland Cement Concrete Pavements, and now assists with the training of agency staff for both courses.

### Roadway Pavement Distress Surveys

Mr. Escobedo performs all activities relating to pavement data collection using hardcopy forms or a Personal Digital Assistant (PDA). As part of the quality control process, he performs cross-checks of data in the PMS database. Mr. Escobedo has performed quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up to date. During this process, he also generates detailed reports, which are needed to help perform his cross-checks of the data collected.

Mr. Escobedo is very involved with training technicians and engineers in performing data collection for agencies all over the State of California. Listed below are a handful of agencies where Mr. Escobedo has performed condition surveys. This easily includes over 5,000 centerline miles of roads and streets.

### Additional Related Experience

Franc is very proficient in all MicroPaver distresses identification procedures. He has not only attended yearly in-house training but has assisted in training local agencies on MicroPAVER distress identification and collection procedures. Franc participated in the calibration testing in March of 2012 as part of the OCTA's qualification testing.

### Representative Projects

- Bell
- Buena Park
- Cudahy
- Corona
- Tustin
- La Habra
- Vernon
- San Marino
- San Dimas
- Fullerton
- Torrance
- Chula Vista
- Mission Viejo
- Vista
- Tulare

### Education

Computer Operations Program  
Computer Learning Center, Los Angeles,  
CA, 1983-84

Network Engineering & Administrative  
Program Computer Learning Center,  
Anaheim, CA, 1997

Certified Network Administration  
Computer Learning Center, Anaheim, CA  
1997

### Registrations and Certifications

OCTA MicroPAVER Certification 2012  
MTC StreetSaver Certification 2013

### Total Years of Experience

12



**Marvin Mann**  
**Field Technician**

Mr. Marvin Mann joined NCE in 2011 as a pavement management technician and is experienced in collecting distress data for MTC Pavement Management Systems. Mr. Mann has completed the MTC "Distress Identification" courses for both Asphalt Concrete and Portland Cement Concrete Pavements and NCE in-house QA/QC training programs. Mr. Mann's also has background in construction materials, construction processes and construction specifications.

Mr. Mann has performed condition surveys for handful of agencies ranging from rural to metropolis. He has completed condition surveys for close to 1500 center line miles of roads and streets which include surveys on bituminous Asphalt Concrete Pavements, Portland Cement Concrete Pavements, and gravel surfaced roads. Listed below are some of the agencies where Mr. Mann has performed condition surveys.

**Representative Projects**

• Orange County	• City of Lakeport	• Ada County, Idaho
• City of Torrance	• Contra Costa County	• Lake County
• City of Chula Vista	• Mendocino County	• City of San Bruno
• City of Clearlake	• Ventura County	• Stanislaus County

In addition to conducting field surveys, Mr. Mann has performed all functions related to data collection and is an active participant in the QC process. As part of the quality control process, he performs cross-checks of data in the PMS database. Mr. Mann has performed quality control checks of field collected data and pavement maintenance history to ensure that PMS databases are accurate and up to date. During this process, he also generates detailed reports, which are needed to help perform his cross-checks of the data collected.

**Education**

Certificate – Architecture Technology, Diablo Valley College, 2010

Certificate – 3D Arts, San Francisco State University, 2002

Associates Degree in Wood Technology, Laney College, 1997

**Affiliations**

USGBC Green Associate 2009

**Joined NCE**

2011

**Total Years of Experience**

3

## Appendix C

# **Pavement Management Plan**

## **Average (weighted by area) PCI for:**

- i. Entire Pavement Network**
- ii. MPAH Network**
- iii. Local Network**





City of Seal Beach  
2014 PMS Update  
Street Inventory and PCI Report (MPAH)

2/24/2014

MPAH/Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (lf)	Width (lf)	Area (sf)	Zone	Last Inspection Date	PCI
MPAH	1ST	100	S/OCEAN	N/MARINA	A	AC	887	40	35,480	zne1	10/15/2013	100
MPAH	1ST	300	N/PCH	597NE/PCH	A	AC	597	24	14,328	zne1	10/14/2013	58
MPAH	1ST	200E	S/MARINA	N/PCH	A	AC	2,172	23	49,956	zne1	10/16/2013	66
MPAH	1ST	200W	S/ PCH	N/ MARINA	A	AC	2,172	22	47,784	zne1	10/16/2013	66
MPAH	BOLSA	100	E/SEAL BEACH	W/BALBOA	C	AC	1,985	37	73,445	zne2	10/15/2013	100
MPAH	BOLSA	200	E/BALBOA	W/MAIN	C	AC	993	37	36,741	zne2	12/3/2013	57
MPAH	ELECTRIC	100	E/ 5TH	W/ CORSAIR	C	AC	510	37	18,870	zne1	10/15/2013	98
MPAH	ELECTRIC	200	E/CORSAIR	W/END	C	AC	380	33	12,540	zne1	10/15/2013	93
MPAH	ELECTRIC	300	E/SEAL BEACH	19 W/SEAL BEACH	C	AC	190	34	6,460	zne1	10/15/2013	94
MPAH	ELECTRIC N	100	E/MAIN	W/6TH	C	AC	960	27	25,920	zne1	10/15/2013	46
MPAH	ELECTRIC N	200	E/SEAL BEACH	14TH	C	AC	820	27	22,140	zne1	10/15/2013	98
MPAH	ELECTRIC N	300	14TH	W/ MAIN	C	AC	1,590	27	42,930	zne1	10/15/2013	94
MPAH	ELECTRIC S	100	E/6TH	W/MAIN	C	AC	910	25	22,750	zne1	10/15/2013	85
MPAH	ELECTRIC S	200	E/SEAL BEACH	14TH	C	AC	755	25	18,875	zne1	10/15/2013	97
MPAH	ELECTRIC S	300	14TH	W/MAIN	C	AC	1,605	25	40,125	zne1	10/15/2013	40
MPAH	LAMPSON	100	W/ BASSWOOD	200 E/ O BASSWOOD	A	AC	200	56	11,200	zne6	10/29/2013	77
MPAH	LAMPSON	200	E/BASSWOOD	W/ SEAL BEACH	A	AC	3,300	60	198,000	zne6	10/29/2013	81
MPAH	LAMPSON	300	E/ E CITY LIMIT	200 E/ BASSWOOD	A	AC	7,400	60	444,000	zne6	10/29/2013	92
MPAH	MARINA	100	E/PCH	6TH	C	AC	629	61	38,369	zne1	10/15/2013	24
MPAH	MARINA	200	E/ 6TH	W/ W CITY LIMIT	C	AC	2,219	50	110,950	zne1	10/15/2013	88
MPAH	OLD RANCH PARKWAY	100	SEAL BEACH	200 W/ SEAL BEACH	A	AC	520	48	24,960	zne3	10/21/2013	44
MPAH	OLD RANCH PARKWAY	200	200 W/ SEAL BEACH	720 W/ SEAL BEACH	A	AC	200	64	12,800	zne3	10/21/2013	60
MPAH	OLD RANCH PARKWAY	300	720 W/ SEAL BEACH	W/ 22 FWY	A	AC	1,030	34	35,020	zne3	10/21/2013	24
MPAH	SEAL BEACH BLVD	100	S/ELECTRIC	N/PCH	A	AC	1,510	40	60,400	zne1	10/15/2013	95
MPAH	SEAL BEACH BLVD	100	S/PCH	N/BOLSA	A	AC	1,640	97	159,080	zne6	10/15/2013	99
MPAH	SEAL BEACH BLVD	200	S/BOLSA	N/ADOLFO LOPEZ	A	AC	3,320	99	328,680	zne6	10/15/2013	100
MPAH	SEAL BEACH BLVD	300	S/ADOLFO LOPEZ	N/WESTMINSTER	A	AC	4,080	98	399,840	zne6	10/14/2013	92
MPAH	SEAL BEACH BLVD	400	S/WESTMINSTER	N/BEVERLY MANOR	A	AC	4,536	95	430,920	zne6	10/29/2013	83
MPAH	SEAL BEACH BLVD	500	OLD RANCH PKY	O N/ LAMPSON	A	AC	833	89	74,137	zne6	10/29/2013	96
MPAH	SEAL BEACH BLVD	600	S/ LAMPSON	ST. CLOUD DR	A	AC	915	77	70,455	zne6	10/29/2013	84
MPAH	SEAL BEACH BLVD	700	ST. CLOUD DR	PLYMOUTH	A	AC	1,491	77	114,807	zne6	10/29/2013	93
MPAH	SEAL BEACH BLVD	800	S/ROSSMOOR	N/BRADBURY	A	AC	1,040	97	100,880	zne6	10/29/2013	96
MPAH	WESTMINSTER	100	W/CITY LIMIT	E/SEAL BEACH	A	AC	4,360	79	344,440	zne6	10/14/2013	58
MPAH	WESTMINSTER	200	E/BOLSA CHICA	W/SEAL BEACH	A	AC	10,610	72	763,920	zne6	10/14/2013	36

	Very Poor	0-40	4%
	Poor	41-59	4%
	Fair	60-74	2%



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2/24/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (lf)	Width (lf)	Area (sf)	Zone	Last Inspection Date	PCI
Local	10TH	100	S/ELECTRIC	N/PCH	E	AC	660	40	26,400	zne1	10/16/2013	92
Local	10TH	200	S/OCEAN	N/ELECTRIC	E	AC	950	40	38,000	zne1	10/30/2013	98
Local	10TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	zne1	10/31/2013	72
Local	11TH	200	S/ELECTRIC	N/LANDING	E	AC	210	37	7,770	zne1	10/16/2013	56
Local	11TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	zne1	10/31/2013	86
Local	11TH	400	S/OCEAN	N/ ELECTRIC	E	AC	900	40	36,000	zne1	10/31/2013	99
Local	12TH	100	S/ELECTRIC	N/PCH	C	AC	860	37	31,820	zne1	10/16/2013	98
Local	12TH	200	S/ OCEAN	N/ ELECTRIC	E	PCC	810	40	32,400	zne1	10/30/2013	95
Local	12TH	300	S/SEAL	N/OCEAN	E	AC	210	24	5,040	zne1	10/30/2013	81
Local	13TH	100	S/ELECTRIC	N/PCH	E	AC	960	21	20,160	zne1	10/16/2013	44
Local	13TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	710	40	28,400	zne1	10/30/2013	97
Local	13TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	zne1	10/30/2013	87
Local	14TH	100	S/ELECTRIC	N/PCH	E	AC	1,010	21	21,210	zne1	10/16/2013	32
Local	14TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	660	40	26,400	zne1	10/31/2013	95
Local	14TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	zne1	10/31/2013	58
Local	15TH	100	S/ELECTRIC	N/PCH	E	AC	1,110	21	23,310	zne1	10/16/2013	23
Local	16TH	100	S/ELECTRIC	N/PCH	E	AC	1,160	21	24,360	zne1	10/16/2013	52
Local	17TH	100	S/ELECTRIC	N/PCH	E	AC	1,260	21	26,460	zne1	10/16/2013	67
Local	2ND	100	S/ OCEAN	N/ CENTRAL	E	AC	860	40	34,400	zne1	10/28/2013	98
Local	3RD ST	100	S/ OCEAN	N/ CENTRAL	E	AC	760	40	30,400	zne1	10/28/2013	99
Local	4TH ST	100	S/ OCEAN	N/ MARINA	E	AC	1,200	40	48,000	zne1	10/28/2013	99
Local	5TH	100	S/MARINA	N/PCH	C	AC	660	60	39,600	zne1	10/30/2013	88
Local	5TH	200	S/OCEAN	N/MARINA	E	AC	1,400	40	56,000	zne1	10/30/2013	90
Local	6TH	100	S/OCEAN	N/ELECTRIC	E	AC	1,300	40	52,000	zne1	10/30/2013	100
Local	7TH	100	S/ELECTRIC	N/MARINA	E	AC	210	40	8,400	zne1	10/16/2013	98
Local	7TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,280	40	51,200	zne1	10/30/2013	100
Local	8TH	100	S/ELECTRIC	N/PCH	E	AC	460	40	18,400	zne1	10/16/2013	100
Local	8TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,150	40	46,000	zne1	10/30/2013	100
Local	ADOLFO LOPEZ	100	W/END	425 E/SEAL BEACH	E	AC	800	60	48,000	zne6	10/13/2013	81
Local	ADOLFO LOPEZ	200	W/SEAL BEACH	425 W/SEAL BEACH	E	AC	425	60	25,500	zne6	10/13/2013	63
Local	AGUA	100	S/ MARLIN	N/ END	E	AC	220	27	5,940	zne5	10/25/2013	94
Local	ALMOND	100	E/OLEANDER	W/ASTER	C	AC	4,390	36	158,040	zne3	10/21/2013	91



City of Seal Beach  
2014 PMS Update  
Street Inventory and PCI Report (Local)

2/24/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (lf)	Width (lf)	Area (sf)	Zone	Last Inspection Date	PCI
Local	ALMOND	200	E/ VIOLET	ROSE CIR	C	AC	765	37	28,305	zne3	10/21/2013	99
Local	ALMOND	300	ROSE CIR	W/ OLEANDER	C	AC	705	37	26,085	zne3	10/21/2013	98
Local	ASTER	100	S/ ALMOND	N/ BIRCHWOOD	E	AC	1,239	37	45,843	zne3	10/21/2013	100
Local	ASTER	200	N/ BIRCHWOOD	N/ CANDLEBERRY	E	AC	206	37	7,622	zne3	10/21/2013	97
Local	AVALON	100	S/ CATALINA	N/ END	E	AC	430	33	14,190	zne2	10/25/2013	97
Local	BALBOA	100	S/BOLSA	N/CATALINA	C	AC	1,060	37	39,220	zne2	10/25/2013	27
Local	BALBOA	200	S/PCH	N/BOLSA	E	AC	660	37	24,420	zne2	10/25/2013	100
Local	BANYAN	100	E/CAMELIA	W/COLUMBINE	E	AC	600	33	19,800	zne3	10/21/2013	88
Local	BASSWOOD	100	E/ASTER	W/LAMPSON	C	AC	410	36	14,760	zne3	10/21/2013	100
Local	BAYOU	100	E/BAYSIDE	W/HARBOR	E	AC	630	33	20,790	zne2	10/31/2013	96
Local	BAYSIDE	100	S/BOLSA	N/CRESTVIEW	E	AC	1,410	33	46,530	zne2	10/31/2013	95
Local	BEACHCOMBER	100	S/BOLSA	N/SEA BREEZE	E	AC	1,160	33	38,280	zne2	10/25/2013	100
Local	BERYL COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	zne5	10/25/2013	96
Local	BIRCHWOOD	100	E/ OLEANDER	W/ ASTER	E	AC	3,660	33	120,780	zne3	10/17/2013	98
Local	BLUE BELL	100	S/ALMOND	N/BIRCHWOOD	E	AC	710	33	23,430	zne3	10/21/2013	74
Local	CAMELIA	100	S/ALMOND	N/BANYAN	E	AC	590	33	19,470	zne3	10/21/2013	88
Local	CANDLEBERRY	100	E/FUCHSIA	W/LAMPSON	E	AC	2,210	36	79,560	zne3	10/17/2013	98
Local	CANDLEBERRY	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,560	37	57,720	zne3	10/17/2013	100
Local	CANDLEBERRY	300	E/WISTERIA	W/OLEANDER	E	AC	1,660	33	54,780	zne3	10/18/2013	96
Local	CARAVEL	100	S/ MARINA	N/ CORSAIR	E	AC	360	37	13,320	zne1	10/28/2013	97
Local	CARMEL	100	E/ SURF	W/ COASTLINE	E	AC	360	37	13,320	zne2	10/28/2013	96
Local	CARNATION	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	87
Local	CATALINA	100	E/BALBOA	W/COASTLINE	E	AC	1,910	37	70,670	zne2	10/25/2013	97
Local	CATALINA	200	E/END	W/BALBOA	E	AC	2,470	37	91,390	zne2	10/25/2013	95
Local	CENTRAL	100	E/12TH	W/MAIN	C	AC	860	40	34,400	zne1	10/31/2013	100
Local	CENTRAL	200	E/1ST	W/2ND	C	AC	260	20	5,200	zne1	10/31/2013	100
Local	CENTRAL	300	E/2ND	W/MAIN	C	AC	2,160	40	86,400	zne1	10/28/2013	100
Local	CENTRAL WY	100	E/ 2ND	W/ 1ST	E	AC	260	40	10,400	zne1	10/28/2013	99
Local	CENTRAL WY	200	E/ 4TH	W/ 2ND	E	AC	560	38	21,280	zne1	10/28/2013	99
Local	CENTRAL WY	300	E/ 5TH	W/ 4TH	E	AC	260	38	9,880	zne1	10/28/2013	98
Local	CLIPPER	100	E/ CARAVEL	W/ ELECTRIC	E	AC	910	33	30,030	zne1	10/28/2013	97
Local	CLOVER	100	S/ALMOND	N/END	E	AC	130	33	4,290	zne3	10/21/2013	99



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Local	COASTLINE	100	S/CARMEL	N/END	E	AC	480	27	12,960	zne2	10/28/2013	95
Local	COASTLINE	200	E/CARMEL	W/BALBOA	E	AC	2,380	33	78,540	zne2	10/25/2013	93
Local	COLLEGE PARK	100	E/HARVARD	W/HARVARD	C	AC	2,590	37	95,830	zne4	10/16/2013	94
Local	COLLEGE PARK	200	E/HARVARD	W/CITY LIMIT	C	AC	940	44	41,360	zne4	10/16/2013	64
Local	COLUMBINE	100	S/ALMOND	N/BANYAN	E	AC	210	33	6,930	zne3	10/21/2013	89
Local	CORAL	100	E/ END	W/ BAY VIEW	E	AC	230	27	6,210	zne2	10/25/2013	93
Local	CORSAIR	100	S/CARAVEL	N/SCHOONER	E	AC	1,020	33	33,660	zne1	10/28/2013	96
Local	CREST	100	S/CATALINA	N/CRESTVIEW	E	AC	210	33	6,930	zne2	10/25/2013	94
Local	CRESTVIEW	100	E/ CATALINA	W/ AVALON	E	AC	3,060	33	100,980	zne2	10/25/2013	96
Local	CRYSTAL	100	S/ CRYSTAL COVE	N/ END	E	AC	240	27	6,480	zne5	10/25/2013	96
Local	CRYSTAL COVE	100	E/ MARBLE COVE	W/ OPAL COVE	E	AC	520	33	17,160	zne5	10/25/2013	96
Local	DAFFODIL	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	87
Local	DAHLIA	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	96
Local	DAISY	100	S/ALMOND	N/BIRCHWOOD	E	AC	410	33	13,530	zne3	10/21/2013	59
Local	DAISY	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	210	33	6,930	zne3	10/17/2013	80
Local	DAISY CIRCLE	100	S/FIR	N/END	E	AC	230	33	7,590	zne3	10/18/2013	73
Local	DARTMOUTH	100	E/END	W/HARVARD	E	AC	180	34	6,120	zne4	10/16/2013	77
Local	DOGWOOD	100	E/DAISY	W/IRONWOOD	E	AC	1,470	33	48,510	zne3	10/17/2013	89
Local	DOGWOOD	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,520	33	50,160	zne3	10/17/2013	88
Local	DOGWOOD	300	E/WISTERIA	W/OLEANDER	E	AC	1,710	33	56,430	zne3	10/18/2013	71
Local	DOLPHIN	100	S/SEAL WAY	N/ OCEAN	E	AC	226	24	5,424	zne1	10/30/2013	70
Local	DOLPHIN	200	N/ OCEAN	N/ ELECTRIC	E	AC	582	24	13,968	zne1	10/30/2013	92
Local	DORY	100	S/GALLEON	N/SCHOONER	E	AC	360	28	10,080	zne2	10/28/2013	94
Local	DRIFTWOOD	100	E/BALBOA	W/COASTLINE	E	AC	1,460	33	48,180	zne2	10/28/2013	99
Local	EBBTIDE	100	S/ COASTLINE	N/ END	E	AC	230	27	6,210	zne2	10/28/2013	96
Local	ELDER	100	HEATHER	W/IRONWOOD	E	AC	2,002	36	72,072	zne3	10/17/2013	100
Local	ELDER	200	E/OLEANDER	HEATHER	E	AC	1,130	36	40,680	zne3	10/17/2013	99
Local	ELDER	300	E/VIOLET	W/PRIMROSE	E	AC	1,380	33	45,540	zne3	10/18/2013	90
Local	EMERALD COVE	100	E/ BERYL COVE	W/ JADE COVE	E	AC	580	33	19,140	zne5	10/25/2013	96
Local	EMERALD PL	100	S/ EMERALD COVE	N/ END	E	AC	230	27	6,210	zne5	10/25/2013	96
Local	FATHOM	100	E/SILVER SHOALS	W/BALBOA	E	AC	810	33	26,730	zne2	10/28/2013	99
Local	FERN	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	94



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Local	FIR	100	E/GOLDENROD	W/IRONWOOD	E	AC	1,460	33	48,180	zne3	10/17/2013	99
Local	FIR	200	E/ROSE	W/HEATHER	E	AC	1,260	33	41,580	zne3	10/17/2013	80
Local	FIR	300	E/SUNFLOWER	W/ROSE	E	AC	330	33	10,890	zne3	10/17/2013	100
Local	FIR	400	E/WISTERIA	W/SUNFLOWER	E	AC	1,220	33	40,260	zne3	10/17/2013	100
Local	FIR CIRCLE	100	S/FIR	N/END	E	AC	130	60	7,800	zne3	10/17/2013	100
Local	FUCHSIA	100	S/BIRCHWOOD	N/ELDER	E	AC	640	33	21,120	zne3	10/17/2013	100
Local	FUCHSIA CIRCLE	100	S/FIR	N/END	E	AC	330	33	10,890	zne3	10/17/2013	99
Local	GALLEON	100	S/ELECTRIC	N/DORY	E	AC	970	33	32,010	zne1	10/28/2013	78
Local	GOLDENROD	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	97
Local	GOLDENROD	200	S/ELDER	N/END	E	AC	610	33	20,130	zne3	10/17/2013	99
Local	GUAVA	100	E/IRONWOOD	W/END	E	AC	530	33	17,490	zne3	10/18/2013	99
Local	GUAVA	200	E/PANSY	W/HEATHER	E	AC	1,360	33	44,880	zne3	10/18/2013	99
Local	HARBOR	100	S/BAYSIDE	N/BAYOU	E	AC	760	33	25,080	zne2	10/31/2013	20
Local	HARVARD	100	S/COLLEGE PARK	W/END	E	AC	3,310	37	122,470	zne4	10/16/2013	94
Local	HAZELNUT	100	S/GUAVA	N/HEATHER	E	AC	1,210	33	39,930	zne3	10/18/2013	99
Local	HAZELNUT	200	E/HEATHER	W/ROSE	E	AC	1,610	33	53,130	zne3	10/18/2013	80
Local	HAZELNUT	300	E/WISTERIA	W/SUNFLOWER	E	AC	1,310	33	43,230	zne3	10/18/2013	44
Local	HEATHER	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	97
Local	HEATHER	200	S/ELDER	N/HAZELNUT	C	AC	790	37	29,230	zne3	10/17/2013	99
Local	HEATHER	300	S/HAZELNUT	N/LAMPSON	C	AC	490	37	18,130	zne3	10/17/2013	97
Local	IRIS	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	88
Local	IRIS	200	HAZELNUT AVE	IRONWOOD AVE	E	AC	226	32	7,232	zne3	10/18/2013	35
Local	IRONWOOD	50	S/CANDLEBERRY	ELDER	C	AC	524	33	17,292	zne3	10/17/2013	100
Local	IRONWOOD	100	ELDER	N/HEATHER	C	AC	1,967	33	64,911	zne3	10/17/2013	100
Local	IRONWOOD	200	E/ROSE	W/IRIS	C	AC	1,420	33	46,860	zne3	10/18/2013	41
Local	IRONWOOD	300	E/ WISTERIA	W/ TULIP	C	AC	322	37	11,914	zne3	10/16/2013	100
Local	IRONWOOD	400	W/ TULIP	W/ SUNFLOWER	C	AC	1,020	37	37,740	zne3	10/18/2013	40
Local	ISLAND VIEW	100	S/BOLSA	N/SEA BREEZE	E	AC	1,110	33	36,630	zne2	10/25/2013	100
Local	JADE COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	zne5	10/25/2013	94
Local	JASMIN	100	S/ALMOND	N/END	E	AC	230	33	7,590	zne3	10/21/2013	95
Local	LAGUNA	100	0 S/ MARLIN	0 N/ END	E	AC	380	27	10,260	zne5	10/25/2013	97
Local	LANDING	100	E/12TH	W/11TH	E	AC	260	42	10,920	zne1	10/16/2013	40



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Local	LANDING	200	E/SEAL BEACH	W/12TH	E	AC	1,210	21	25,410	zne1	10/16/2013	100
Local	LOYOLA PLAZA	100	S/COLLEGE PARK	N/END	E	AC	330	25	8,250	zne4	10/16/2013	80
Local	MAIN	100	S/ELECTRIC	N/PCH	C	AC	690	55	37,950	zne1	10/30/2013	55
Local	MAIN	200	S/OCEAN AVE	N/ELECTRIC	C	AC	1,190	57	67,830	zne1	10/30/2013	89
Local	MAR VISTA	100	E/ CATALINA	W/ COASTLINE	E	AC	1,610	33	53,130	zne2	10/28/2013	99
Local	MAR VISTA	200	W/COASTLINE	PCH	E	AC	123	36	4,428	zne2	10/28/2013	99
Local	MARBLE COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	zne5	10/25/2013	97
Local	MARIGOLD	100	S/BIRCHWOOD	N/CANDLEBERRY	E	AC	160	33	5,280	zne3	10/17/2013	72
Local	MARIGOLD	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	160	33	5,280	zne3	10/17/2013	85
Local	MARINE	100	E/ELECTRIC	W/DOLPHIN	E	AC	320	24	7,680	zne1	10/31/2013	91
Local	MARLIN	100	E/SEAL BEACH	W/BALBOA	E	AC	1,610	37	59,570	zne5	10/25/2013	96
Local	NEPTUNE	100	S/SEAL	N/OCEAN	E	AC	210	24	5,040	zne1	10/14/2013	94
Local	NORTH GATE	100	W/SEAL BEACH	76 W/SEAL BEACH	E	AC	760	42	31,920	zne6	10/30/2013	97
Local	NORTH GATE	200	76 E/SEAL BEACH	W/END	E	AC	3,300	25	82,500	zne6	10/30/2013	100
Local	OCCIDENTAL	100	E/ STANFORD	W/ HARVARD	E	AC	160	33	5,280	zne4	10/16/2013	79
Local	OCEAN	100	E/ELECTRIC	W/MAIN	C	AC	2,440	51	124,440	zne1	10/15/2013	90
Local	OCEAN	200	E/MAIN	W/1ST	C	AC	2,490	52	129,480	zne1	10/15/2013	93
Local	OLEANDER	100	S/ALMOND	N/FIR	E	AC	1,320	36	47,520	zne3	10/18/2013	56
Local	OPAL COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	zne5	10/28/2013	97
Local	PANSY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	zne6	10/18/2013	91
Local	PANSY	200	S/FIR	N/GUAVA	E	AC	160	33	5,280	zne6	10/18/2013	99
Local	PRIMROSE	100	S/DOGWOOD	N/ELDER	E	AC	210	33	6,930	zne3	10/18/2013	96
Local	PRIMROSE CIR	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	zne3	10/21/2013	94
Local	PRINCETON	100	E/END	W/HARVARD	E	AC	230	30	6,900	zne4	10/21/2013	63
Local	PURDUE CIRCLE	100	S/ END	N/ COLLEGE PARK	E	AC	68	27	1,836	zne4	10/16/2013	52
Local	RIVIERA	100	S/MARLIN	N/BOLSA	E	AC	560	31	17,360	zne5	10/25/2013	96
Local	ROSE	100	S/ ALMOND	N/ END	C	AC	430	33	14,190	zne3	10/21/2013	94
Local	ROSE	200	S/FIR	N/HAZELNUT	C	AC	390	37	14,430	zne3	10/17/2013	99
Local	ROSE	300	S/HAZELNUT	N/LAMPSON	C	AC	440	37	16,280	zne3	10/17/2013	99
Local	ROSSMOOR CTR	100	E/SEAL BEACH	W/ WEST RD	C	AC	864	30	25,920	zne3	10/31/2013	89
Local	ROSSMOOR CTR	200	E/ WEST RD	W/ MONTECITO	C	AC	364	28	10,192	zne3	10/31/2013	37
Local	SAND PIPER	100	S/BOLSA	N/TAPER	E	AC	1,110	33	36,630	zne1	10/31/2013	100





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Local	SCHOONER	100	E/GALLEON	W/DORY	E	AC	660	33	21,780	zne1	10/28/2013	91
Local	SEA BREEZE	100	S/BOLSA	N/CATALINA	E	AC	1,160	33	38,280	zne2	10/25/2013	100
Local	SEAL	100	E/ 11TH	W/ 10TH	E	PCC	290	15	4,350	zne1	10/30/2013	72
Local	SEAL WAY	100	E/ELECTRIC	W/14TH	E	PCC	1,240	13	16,120	zne1	10/30/2013	88
Local	SEAL WAY	200	E/14TH	W/11TH	E	PCC	920	12	11,040	zne1	10/30/2013	100
Local	SILVER SHOALS	100	S/BOLSA	N/FATHOM	E	AC	300	33	9,900	zne2	10/28/2013	27
Local	SOUTH SHORE	100	S/BOLSA	N/TAPER	E	AC	1,060	33	34,980	zne2	10/25/2013	100
Local	STANFORD	100	N/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,860	32	59,520	zne3	10/16/2013	94
Local	SUNFLOWER	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	zne3	10/18/2013	99
Local	SUNFLOWER	200	S/FIR	N/IRONWOOD	E	AC	560	37	20,720	zne3	10/18/2013	43
Local	SURF	100	S/ CATALINA	N/ END	E	AC	480	33	15,840	zne2	10/28/2013	97
Local	TAPER	100	S/BOLSA	N/CATALINA	E	AC	1,110	33	36,630	zne2	10/25/2013	100
Local	TEABERRY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	zne2	10/18/2013	98
Local	TULIP	100	S/IRONWOOD	N/LAMPSON	E	AC	70	36	2,520	zne3	10/16/2013	100
Local	VIOLET	100	S/ ALMOND	N/ CANDLEBERRY	E	AC	660	33	21,780	zne3	10/18/2013	98
Local	VIOLET	200	S/ELDER	N/FIR	E	AC	160	33	5,280	zne3	10/18/2013	48
Local	WISTERIA	100	S/DOGWOOD	N/IRONWOOD	E	AC	990	37	36,630	zne3	10/17/2013	91
Local	WISTERIA	200	S/END	N/DOGWOOD	E	AC	1,040	33	34,320	zne3	10/17/2013	90
Local	YALE	100	E/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,160	33	38,280	zne4	10/16/2013	86
Local	YALE CIRCLE	100	E/END	W/YALE	E	AC	130	48	6,240	zne4	10/16/2013	84

	C - Collector	E - Residential	
	Very Poor	0-40	4%
	Poor	41-59	6%
	Fair	60-74	10%

## Appendix D



# **Pavement Management Plan**

## **Work History**

### **(Maintenance & Rehabilitation)**



Maintenance and Rehabilitation Treatments

Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
10TH	100	S/ELECTRIC	N/PCH	E	AC	660	40	26,400	1/1/1970	New Construction - Initial (Major MR)
10TH	200	S/OCEAN	N/ELECTRIC	E	AC	950	40	38,000	2/1/2000	Overlay - AC (Major MR)
10TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	2/1/2000	Overlay - AC (Major MR)
11TH	200	S/ELECTRIC	N/LANDING	E	AC	210	37	7,770	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
11TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	1/1/1970	New Construction - Initial (Major MR)
11TH	400	S/OCEAN	N/ ELECTRIC	E	AC	900	40	36,000	1/1/1970	Initial Construction
12TH	100	S/ELECTRIC	N/PCH	C	AC	860	37	31,820	1/1/2008	GRIND & OVERLAY (Major MR)
12TH	200	S/ OCEAN	N/ ELECTRIC	E	PCC	810	40	32,400	10/1/1997	New Construction - PCC (Major MR)
12TH	300	S/SEAL	N/OCEAN	E	AC	210	24	5,040	1/1/1970	New Construction - Initial (Major MR)
13TH	100	S/ELECTRIC	N/PCH	E	AC	960	21	20,160	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
13TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	710	40	28,400	1/1/1970	Initial Construction
13TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	7/2/2012	Slurry Seal (Global MR)
14TH	100	S/ELECTRIC	N/PCH	E	AC	1,010	21	21,210	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
14TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	660	40	26,400	1/1/1970	Initial Construction
14TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	7/2/2012	Slurry Seal (Global MR)
15TH	100	S/ELECTRIC	N/PCH	E	AC	1,110	21	23,310	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
16TH	100	S/ELECTRIC	N/PCH	E	AC	1,160	21	24,360	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
17TH	100	S/ELECTRIC	N/PCH	E	AC	1,260	21	26,460	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
1ST	100	S/OCEAN	N/MARINA	E	AC	887	40	35,480	5/24/2010	Overlay - AC (Major MR)
1ST	300	N/PCH	597NE/PCH	E	AC	597	24	14,328	1/1/1970	New Construction - Initial (Major MR)
1ST	200E	S/MARINA	N/PCH	E	AC	2,172	23	49,956	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
1ST	200W	S/ PCH	N/ MARINA	E	AC	2,172	22	47,784	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
2ND	100	S/ OCEAN	N/ CENTRAL	A	AC	860	40	34,400	1/1/1970	Initial Construction
3RD ST	100	S/ OCEAN	N/ CENTRAL	A	AC	760	40	30,400	1/1/1970	Initial Construction
4TH ST	100	S/ OCEAN	N/ MARINA	A	AC	1,200	40	48,000	1/1/1970	Initial Construction
5TH	100	S/MARINA	N/PCH	C	AC	660	60	39,600	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
5TH	200	S/OCEAN	N/MARINA	E	AC	1,400	40	56,000	1/1/1970	New Construction - Initial (Major MR)
6TH	100	S/OCEAN	N/ELECTRIC	E	AC	1,300	40	52,000	5/24/2010	GRIND & OVERLAY (Major MR)
7TH	100	S/ELECTRIC	N/MARINA	E	AC	210	40	8,400	5/24/2010	GRIND & OVERLAY (Major MR)
7TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,280	40	51,200	5/24/2010	GRIND & OVERLAY (Major MR)
8TH	100	S/ELECTRIC	N/PCH	E	AC	460	40	18,400	5/24/2010	GRIND & OVERLAY (Major MR)
8TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,150	40	46,000	5/24/2010	GRIND & OVERLAY (Major MR)



Maintenance and Rehabilitation Treatments

Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
ADOLFO LOPEZ	100	W/END	425 E/SEAL BEACH	E	AC	800	60	48,000	1/1/2007	GRIND & OVERLAY (Major MR)
ADOLFO LOPEZ	200	W/SEAL BEACH	425 W/SEAL BEACH	E	AC	425	60	25,500	1/1/2007	GRIND & OVERLAY (Major MR)
AGUA	100	S/ MARLIN	N/ END	A	AC	220	27	5,940	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
ALMOND	100	E/OLEANDER	W/ASTER	C	AC	4,390	36	158,040	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
ALMOND	200	E/ VIOLET	E EDGE ROSE CIR	C	AC	765	37	28,305	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
ALMOND	300	E EDGE ROSE CIR	W/ OLEANER	A	AC	705	37	26,085	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
ASTER	100	S/ ALMOND	N/ BIRCHWOOD	E	AC	1,239	37	45,843	10/1/2011	GRIND & OVERLAY (Major MR)
ASTER	200	N/ BIRCHWOOD	N/ CANDLEBERRY	A	AC	206	37	7,622	10/1/2011	GRIND & OVERLAY (Major MR)
AVALON	100	S/ CATALINA	N/ END	A	AC	430	33	14,190	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
BALBOA	100	S/BOLSA	N/CATALINA	C	AC	1,060	37	39,220	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
BALBOA	200	S/PCH	N/BOLSA	E	AC	660	37	24,420	6/11/2012	ARHM Rehabilitation (Major MR)
BANYAN	100	E/CAMELIA	W/COLUMBINE	E	AC	600	33	19,800	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
BASSWOOD	100	E/ASTER	W/LAMPSON	C	AC	410	36	14,760	5/1/2011	GRIND & OVERLAY (Major MR)
BAYOU	100	E/BAYSIDE	W/HARBOR	E	AC	630	33	20,790	1/1/2008	GRIND & OVERLAY (Major MR)
BAYSIDE	100	S/BOLSA	N/CRESTVIEW	C	AC	1,410	33	46,530	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
BEACHCOMBER	100	S/BOLSA	N/SEA BREEZE	E	AC	1,160	33	38,280	1/1/2008	GRIND & OVERLAY (Major MR)
BERYL COVE	100	S/ EMERALD COVE	N/ MARLIN	A	AC	360	33	11,880	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
BIRCHWOOD	100	E/ OLEANDER	W/ ASTER	A	AC	3,660	33	120,780	4/1/1984	New Construction (Major MR)
BLUE BELL	100	S/ALMOND	N/BIRCHWOOD	E	AC	710	33	23,430	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
BOLSA	100	E/SEAL BEACH	W/MAIN	A	AC	2,810	37	103,970	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
BOLSA	100	E/SEAL BEACH	W/BALBOA	A	AC	1,985	37	73,445	6/11/2012	ARHM Rehabilitation (Major MR)
CAMELIA	100	S/ALMOND	N/BANYAN	E	AC	590	33	19,470	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
CANDLEBERRY	100	E/FUCHSIA	W/LAMPSON	E	AC	2,210	36	79,560	6/30/2011	GRIND & OVERLAY (Major MR)
CANDLEBERRY	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,560	37	57,720	5/24/2010	GRIND & OVERLAY (Major MR)
CANDLEBERRY	300	E/WISTERIA	W/OLEANDER	E	AC	1,660	33	54,780	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
CARAVEL	100	S/ MARINA	N/ CORSAIR	A	AC	360	37	13,320	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
CARMEL	100	E/ SURF	W/ COASTLINE	A	AC	360	37	13,320	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
CARNATION	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
CATALINA	100	E/BALBOA	W/COASTLINE	C	AC	1,910	37	70,670	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
CATALINA	200	E/END	W/BALBOA	C	AC	2,470	37	91,390	8/11/1999	Surface Treatment - Slurry Seal (Global MR)
CENTRAL	100	E/12TH	W/MAIN	C	AC	860	40	34,400	5/24/2010	GRIND & OVERLAY (Major MR)
CENTRAL	200	E/1ST	W/2ND	C	AC	260	20	5,200	5/24/2010	GRIND & OVERLAY (Major MR)



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Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
CENTRAL	300	E/2ND	W/MAIN	C	AC	2,160	40	86,400	5/24/2010	GRIND & OVERLAY (Major MR)
CENTRAL WY	100	E/ 2ND	W/ 1ST	A	AC	260	40	10,400	1/1/1970	Initial Construction
CENTRAL WY	200	E/ 4TH	W/ 2ND	A	AC	560	38	21,280	1/1/1970	Initial Construction
CENTRAL WY	300	E/ 5TH	W/ 4TH	A	AC	260	38	9,880	1/1/1970	Initial Construction
CLIPPER	100	E/ CARAVEL	W/ ELECTRIC	A	AC	910	33	30,030	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
CLOVER	100	S/ALMOND	N/END	E	AC	130	33	4,290	7/9/2013	Slurry Seal (Global MR)
COASTLINE	100	S/CARMEL	N/END	E	AC	480	27	12,960	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
COASTLINE	200	E/CARMEL	W/BALBOA	C	AC	2,380	33	78,540	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
COLLEGE PARK	100	E/HARVARD	W/HARVARD	C	AC	2,590	37	95,830	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
COLLEGE PARK	200	E/HARVARD	W/CITY LIMIT	E	AC	940	44	41,360	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
COLUMBINE	100	S/ALMOND	N/BANYAN	E	AC	210	33	6,930	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
CORAL	100	E/ END	W/ BAY VIEW	A	AC	230	27	6,210	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
CORSAIR	100	S/CARAVEL	N/SCHOONER	E	AC	1,020	33	33,660	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
CREST	100	S/CATALINA	N/CRESTVIEW	E	AC	210	33	6,930	6/30/2012	Slurry Seal (Global MR)
CRESTVIEW	100	E/ CATALINA	W/ AVALON	A	AC	3,060	33	100,980	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
CRYSTAL	100	S/ CRYSTAL COVE	N/ END	A	AC	240	27	6,480	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
CRYSTAL COVE	100	E/ MARBLE COVE	W/ OPAL COVE	A	AC	520	33	17,160	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
DAFFODIL	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
DAHLIA	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
DAISY	100	S/ALMOND	N/BIRCHWOOD	C	AC	410	33	13,530	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
DAISY	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	210	33	6,930	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
DAISY CIRCLE	100	S/FIR	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
DARTMOUTH	100	E/END	W/HARVARD	E	AC	180	34	6,120	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
DOGWOOD	100	E/DAISY	W/IRONWOOD	E	AC	1,470	33	48,510	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
DOGWOOD	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,520	33	50,160	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
DOGWOOD	300	E/WISTERIA	W/OLEANDER	E	AC	1,710	33	56,430	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
DOLPHIN	100	S/SEAL WAY	N/ OCEAN	E	AC	226	24	5,424	7/2/2012	Slurry Seal (Global MR)
DOLPHIN	200	N/ OCEAN	N/ ELECTRIC	E	AC	582	24	13,968	1/1/1970	Initial Construction
DORY	100	S/GALLEON	N/SCHOONER	E	AC	360	28	10,080	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
DRIFTWOOD	100	E/BALBOA	W/COASTLINE	E	AC	1,460	33	48,180	1/1/2008	GRIND & OVERLAY (Major MR)
EBBTIDE	100	S/ COASTLINE	N/ END	A	AC	230	27	6,210	1/1/1970	Initial Construction
ELDER	100	HEATHER	W/IRONWOOD	E	AC	2,002	36	72,072	6/30/2011	GRIND & OVERLAY (Major MR)



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Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
ELDER	200	E/OLEANDER	HEATHER	E	AC	1,130	36	40,680	7/9/2013	Slurry Seal (Global MR)
ELDER	300	E/VIOLET	W/PRIMROSE	E	AC	1,380	33	45,540	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
ELECTRIC	100	E/ 5TH	W/ CORSAIR	A	AC	510	37	18,870	2/12/2013	ARHM Rehabilitation (Major MR)
ELECTRIC	200	E/CORSAIR	W/END	A	AC	380	33	12,540	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
ELECTRIC	300	E/SEAL BEACH	19 W/SEAL BEACH	A	AC	190	34	6,460	1/1/1970	New Construction - Initial (Major MR)
ELECTRIC N	100	E/MAIN	W/6TH	A	AC	960	27	25,920	7/2/2012	Slurry Seal (Global MR)
ELECTRIC N	200	E/SEAL BEACH	W/MAIN	A	AC	2,410	27	65,070	6/30/2010	GRIND & OVERLAY (Major MR)
ELECTRIC N	300	14TH	W/ MAIN	A	AC	1,590	27	42,930	5/6/2013	ARHM Rehabilitation (Major MR)
ELECTRIC S	100	E/6TH	W/MAIN	A	AC	910	25	22,750	7/2/2012	Slurry Seal (Global MR)
ELECTRIC S	200	E/SEAL BEACH	W/MAIN	A	AC	2,360	25	59,000	6/30/2010	GRIND & OVERLAY (Major MR)
EMERALD COVE	100	E/ BERYL COVE	W/ JADE COVE	A	AC	580	33	19,140	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
EMERALD PL	100	S/ EMERALD COVE	N/ END	A	AC	230	27	6,210	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
FATHOM	100	E/SILVER SHOALS	W/BALBOA	E	AC	810	33	26,730	8/12/1999	Surface Treatment - Slurry Seal (Global MR)
FERN	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
FIR	100	E/GOLDENROD	W/IRONWOOD	E	AC	1,460	33	48,180	5/24/2010	GRIND & OVERLAY (Major MR)
FIR	200	E/ROSE	W/HEATHER	C	AC	1,260	33	41,580	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
FIR	300	E/SUNFLOWER	W/ROSE	C	AC	330	33	10,890	5/24/2010	GRIND & OVERLAY (Major MR)
FIR	400	E/WISTERIA	W/SUNFLOWER	C	AC	1,220	33	40,260	5/24/2010	GRIND & OVERLAY (Major MR)
FIR CIRCLE	100	S/FIR	N/END	E	AC	130	60	7,800	7/9/2013	Slurry Seal (Global MR)
FUCHSIA	100	S/BIRCHWOOD	N/ELDER	C	AC	640	33	21,120	5/24/2010	GRIND & OVERLAY (Major MR)
FUCHSIA CIRCLE	100	S/FIR	N/END	E	AC	330	33	10,890	5/24/2010	GRIND & OVERLAY (Major MR)
GALLEON	100	S/ELECTRIC	N/DORY	E	AC	970	33	32,010	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
GOLDENROD	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
GOLDENROD	200	S/ELDER	N/END	E	AC	610	33	20,130	5/24/2010	GRIND & OVERLAY (Major MR)
GUAVA	100	E/IRONWOOD	W/END	E	AC	530	33	17,490	6/30/2010	Overlay - AC (Major MR)
GUAVA	200	E/PANSY	W/HEATHER	E	AC	1,360	33	44,880	7/9/2013	Slurry Seal (Global MR)
HARBOR	100	S/BAYSIDE	N/BAYOU	E	AC	760	33	25,080	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
HARVARD	100	S/COLLEGE PARK	W/END	C	AC	3,310	37	122,470	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
HAZELNUT	100	S/GUAVA	N/HEATHER	E	AC	1,210	33	39,930	5/24/2010	GRIND & OVERLAY (Major MR)
HAZELNUT	200	E/HEATHER	W/ROSE	E	AC	1,610	33	53,130	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
HAZELNUT	300	E/WISTERIA	W/SUNFLOWER	E	AC	1,310	33	43,230	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
HEATHER	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)

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Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
HEATHER	200	S/ELDER	N/HAZELNUT	C	AC	790	37	29,230	7/9/2013	Slurry Seal (Global MR)
HEATHER	300	S/HAZELNUT	N/LAMPSON	C	AC	490	37	18,130	1/1/2008	GRIND & OVERLAY (Major MR)
IRIS	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
IRIS	200	HAZELNUT AVE	IRONWOOD AVE	E	AC	226	32	7,232	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
IRONWOOD	50	S/CANDLEBERRY	ELDER	E	AC	524	33	17,292	6/30/2011	GRIND & OVERLAY (Major MR)
IRONWOOD	100	ELDER	N/HEATHER	E	AC	1,967	33	64,911	5/6/2013	ARHM Rehabilitation (Major MR)
IRONWOOD	200	E/ROSE	W/IRIS	E	AC	1,420	33	46,860	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
IRONWOOD	300	E/ WISTERIA	W/ TULIP	E	AC	322	37	11,914	5/6/2013	ARHM Rehabilitation (Major MR)
IRONWOOD	400	W/ TULIP	W/ SUNFLOWER	A	AC	1,020	37	37,740	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
ISLAND VIEW	100	S/BOLSA	N/SEA BREEZE	E	AC	1,110	33	36,630	1/1/2008	GRIND & OVERLAY (Major MR)
JADE COVE	100	S/ EMERALD COVE	N/ MARLIN	A	AC	360	33	11,880	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
JASMIN	100	S/ALMOND	N/END	E	AC	230	33	7,590	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
LAGUNA	100	O S/ MARLIN	O N/ END	A	AC	380	27	10,260	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
LAMPSON	100	W/ BASSWOOD	200 E/ O BASSWOOD	A	AC	200	56	11,200	7/1/2002	GRIND & OVERLAY (Major MR)
LAMPSON	200	E/BASSWOOD	W/ SEAL BEACH	A	AC	3,300	60	198,000	7/1/2002	Overlay - AC (Major MR)
LAMPSON	300	E/ E CITY LIMIT	200 E/ BASSWOOD	A	AC	7,200	60	432,000	7/1/2002	Overlay - AC (Major MR)
LANDING	100	E/12TH	W/11TH	E	AC	260	42	10,920	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
LANDING	200	E/SEAL BEACH	W/12TH	E	AC	1,210	21	25,410	7/1/1997	Surface Treatment - Slurry Seal (Global MR)
LOYOLA PLAZA	100	S/COLLEGE PARK	N/END	E	AC	330	25	8,250	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
MAIN	100	S/ELECTRIC	N/PCH	A	AC	690	55	37,950	6/1/1995	Overlay - AC (Major MR)
MAIN	200	S/OCEAN AVE	N/ELECTRIC	A	AC	1,190	57	67,830	6/30/2008	Surface Treatment - Slurry Seal (Global MR)
MAR VISTA	100	E/ CATALINA	W/ COASTLINE	E	AC	1,610	33	53,130	1/1/1970	Initial Construction
MAR VISTA	200	W/COASTLINE	PCH	E	AC	123	36	4,428	1/1/1970	New Construction - Initial (Major MR)
MARBLE COVE	100	S/ CRYSTAL COVE	N/ MARLIN	A	AC	360	33	11,880	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
MARIGOLD	100	S/BIRCHWOOD	N/CANDLEBERRY	E	AC	160	33	5,280	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
MARIGOLD	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	160	33	5,280	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
MARINA	100	E/PCH	6TH	E	AC	629	61	38,369	10/1/1996	Overlay - AC (Major MR)
MARINA	200	E/ 6TH	W/ W CITY LIMIT	A	AC	2,219	50	110,950	10/1/1996	Overlay - AC (Major MR)
MARINE	100	E/ELECTRIC	W/DOLPHIN	E	AC	320	24	7,680	1/1/1970	New Construction - Initial (Major MR)
MARLIN	100	E/SEAL BEACH	W/BALBOA	E	AC	1,610	37	59,570	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
NEPTUNE	100	S/SEAL	N/OCEAN	E	AC	210	24	5,040	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
NEPTUNE	100	S/SEAL	N/OCEAN	E	AC	210	24	5,040	7/2/2012	Slurry Seal (Global MR)



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Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
NORTH GATE	100	W/SEAL BEACH	76 W/SEAL BEACH	E	AC	760	42	31,920	5/24/2010	GRIND & OVERLAY (Major MR)
NORTH GATE	200	76 E/SEAL BEACH	W/END	E	AC	3,300	25	82,500	5/24/2010	GRIND & OVERLAY (Major MR)
OCCIDENTAL	100	E/ STANFORD	W/ HARVARD	A	AC	160	33	5,280	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
OCEAN	100	E/ELECTRIC	W/MAIN	A	AC	2,440	51	124,440	1/1/2007	Overlay - AC (Major MR)
OCEAN	200	E/MAIN	W/1ST	A	AC	2,490	52	129,480	1/1/2007	Overlay - AC (Major MR)
OLD RANCH PARKWAY	100	SEAL BEACH	200 W/ SEAL BEACH	A	AC	520	48	24,960	1/1/1986	Overlay - AC (Major MR)
OLD RANCH PARKWAY	200	200 W/ SEAL BEACH	720 W/ SEAL BEACH	A	AC	200	64	12,800	1/1/1986	Overlay - AC (Major MR)
OLD RANCH PARKWAY	300	720 W/ SEAL BEACH	W/ 22 FWY	A	AC	1,030	34	35,020	1/1/1986	Overlay - AC (Major MR)
OLEANDER	100	S/ALMOND	N/FIR	E	AC	1,320	36	47,520	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
OPAL COVE	100	S/ CRYSTAL COVE	N/ MARLIN	A	AC	360	33	11,880	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
PANSY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
PANSY	200	S/FIR	N/GUAVA	E	AC	160	33	5,280	7/9/2013	Slurry Seal (Global MR)
PRIMROSE	100	S/DOGWOOD	N/ELDER	E	AC	210	33	6,930	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
PRIMROSE CIR	100	S/ ALMOND	N/ END	A	AC	430	33	14,190	1/1/1990	Surface Treatment - Slurry Seal (Global MR)
PRINCETON	100	E/END	W/HARVARD	E	AC	230	30	6,900	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
PURDUE CIRCLE	100	S/ END	N/ COLLEGE PARK	A	AC	68	27	1,836	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
RIVIERA	100	S/MARLIN	N/BOLSA	E	AC	560	31	17,360	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
ROSE	100	S/ ALMOND	N/ END	C	AC	430	33	14,190	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
ROSE	200	S/FIR	N/HAZELNUT	C	AC	390	37	14,430	7/9/2013	Slurry Seal (Global MR)
ROSE	300	S/HAZELNUT	N/LAMPSON	C	AC	440	37	16,280	7/9/2013	Slurry Seal (Global MR)
ROSSMOOR CTR	100	E/SEAL BEACH	W/ WEST RD	C	AC	864	30	25,920	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
ROSSMOOR CTR	200	E/ WEST RD	W/ MONTECITO	A	AC	364	28	10,192	1/1/1970	Initial Construction
SAND PIPER	100	S/BOLSA	N/TAPER	E	AC	1,110	33	36,630	5/6/2013	ARHM Rehabilitation (Major MR)
SCHOONER	100	E/GALLEON	W/DORY	E	AC	660	33	21,780	1/1/2010	Surface Treatment - Slurry Seal (Global MR)
SEA BREEZE	100	S/BOLSA	N/CATALINA	E	AC	1,160	33	38,280	1/1/2008	Overlay - AC (Major MR)
SEAL	100	E/ 11TH	W/ 10TH	A	PCC	290	15	4,350	1/1/1970	Initial Construction
SEAL BEACH BLVD	100	S/ELECTRIC	N/PCH	A	AC	1,510	40	60,400	8/1/2001	Overlay - AC (Major MR)
SEAL BEACH BLVD	100	S/PCH	N/BOLSA	A	AC	1,640	97	159,080	6/30/2011	GRIND & OVERLAY (Major MR)
SEAL BEACH BLVD	100	S/ELECTRIC	N/PCH	A	AC	1,510	40	60,400	7/2/2012	Slurry Seal (Global MR)
SEAL BEACH BLVD	200	S/BOLSA	N/ADOLFO LOPEZ	A	AC	3,320	99	328,680	1/1/2008	Overlay - AC (Major MR)
SEAL BEACH BLVD	300	S/ADOLFO LOPEZ	N/WESTMINSTER	A	AC	4,080	98	399,840	5/24/2010	Overlay - AC (Major MR)
SEAL BEACH BLVD	400	S/WESTMINSTER	N/BEVERLY MANOR	A	AC	4,536	95	430,920	5/24/2010	Overlay - AC (Major MR)



Maintenance and Rehabilitation Treatments

Name	Section ID	From	To	Section Rank *	ST*	Length (lf)*	Width (lf)*	Area (sf)*	Date	Work
SEAL BEACH BLVD	500	OLD RANCH PKY	O N/ LAMPSON	A	AC	833	89	74,137	5/24/2010	Overlay - AC (Major MR)
SEAL BEACH BLVD	600	S/ LAMPSON	ST. CLOUD DR	A	AC	915	77	70,455	5/10/2010	Overlay - AC (Major MR)
SEAL BEACH BLVD	700	ST. CLOUD DR	PLYMOUTH	A	AC	1,491	77	114,807	5/10/2010	Overlay - AC (Major MR)
SEAL BEACH BLVD	800	S/ROSSMOOR	N/BRADBURY	A	AC	1,040	97	100,880	5/10/2010	Overlay - AC (Major MR)
SEAL WAY	100	E/ELECTRIC	W/14TH	E	PCC	1,240	13	16,120	1/1/1970	New Construction - Initial (Major MR)
SEAL WAY	200	E/14TH	W/11TH	E	AC	920	15	13,800	5/24/2010	Overlay - AC (Major MR)
SILVER SHOALS	100	S/BOLSA	N/FATHOM	E	AC	300	33	9,900	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
SOUTH SHORE	100	S/BOLSA	N/TAPER	E	AC	1,060	33	34,980	5/6/2013	ARHM Rehabilitation (Major MR)
STANFORD	100	N/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,860	32	59,520	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
SUNFLOWER	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
SUNFLOWER	200	S/FIR	N/IRONWOOD	E	AC	560	37	20,720	6/1/1995	Overlay - AC (Major MR)
SURF	100	S/ CATALINA	N/ END	A	AC	480	33	15,840	6/30/2010	Surface Treatment - Slurry Seal (Global MR)
TAPER	100	S/BOLSA	N/CATALINA	E	AC	1,110	33	36,630	5/6/2013	ARHM Rehabilitation (Major MR)
TEABERRY	100	S/ ALMOND	N/ END	A	AC	430	33	14,190	1/1/2006	Surface Treatment - Slurry Seal (Global MR)
TULIP	100	S/IRONWOOD	N/LAMPSON	E	AC	70	36	2,520	5/24/2010	GRIND & OVERLAY (Major MR)
VIOLET	100	S/ ALMOND	N/ CANDLEBERRY	E	AC	660	33	21,780	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
VIOLET	200	S/ELDER	N/FIR	E	AC	160	33	5,280	5/1/2003	Surface Treatment - Slurry Seal (Global MR)
WESTMINSTER	100	W/CITY LIMIT	E/SEAL BEACH	A	AC	4,360	79	344,440	8/1/1987	Overlay - AC (Major MR)
WESTMINSTER	200	E/BOLSA CHICA	W/SEAL BEACH	A	AC	10,610	72	763,920	10/1/1997	Overlay - AC (Major MR)
WISTERIA	100	S/DOGWOOD	N/IRONWOOD	C	AC	990	37	36,630	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
WISTERIA	200	S/END	N/DOGWOOD	E	AC	1,040	33	34,320	1/1/2009	Surface Treatment - Slurry Seal (Global MR)
YALE	100	E/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,160	33	38,280	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
YALE CIRCLE	100	E/END	W/YALE	E	AC	130	48	6,240	1/1/2008	Surface Treatment - Slurry Seal (Global MR)
Total Square Feet Maintained in 2012 & 2013:								1,530,990		

\* Definitions =

Section Rank - Functional Classification

(A = Arterial, C = Collector, E = Residential/Local)

ST - Surface Type

(lf) - Linear Foot

(sf) - Square Feet



## Appendix E

## **Projected PCI under Existing Funding Over Next Seven Years**

**Average (weighted by area) PCI for:**

- i. Entire Pavement Network**
- ii. MPAH Network**
- iii. Local Network**



City of Seal Beach  
2014 PMP  
2020 Projected PCI (MPAH)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
MPAH	1ST	100	S/OCEAN	N/MARINA	A	AC	887	40	35,480	83
MPAH	1ST	200E	S/MARINA	N/PCH	A	AC	2,172	23	49,956	88
MPAH	1ST	200W	S/ PCH	N/ MARINA	A	AC	2,172	22	47,784	85
MPAH	1ST	300	N/PCH	597NE/PCH	A	AC	597	24	14,328	88
MPAH	BOLSA	100	E/SEAL BEACH	W/BALBOA	C	AC	1,985	37	73,445	83
MPAH	BOLSA	200	E/BALBOA	W/MAIN	C	AC	993	37	36,741	91
MPAH	ELECTRIC	100	E/ 5TH	W/ CORSAIR	C	AC	510	37	18,870	79
MPAH	ELECTRIC	200	E/CORSAIR	W/END	C	AC	380	33	12,540	91
MPAH	ELECTRIC	300	E/SEAL BEACH	19 W/SEAL BEACH	C	AC	190	34	6,460	75
MPAH	ELECTRIC N	100	E/MAIN	W/6TH	C	AC	960	27	25,920	94
MPAH	ELECTRIC N	200	E/SEAL BEACH	14TH	C	AC	820	27	22,140	79
MPAH	ELECTRIC N	300	14TH	W/ MAIN	C	AC	1,590	27	42,930	83
MPAH	ELECTRIC S	100	E/6TH	W/MAIN	C	AC	910	25	22,750	94
MPAH	ELECTRIC S	200	E/SEAL BEACH	14TH	C	AC	755	25	18,875	78
MPAH	ELECTRIC S	300	14TH	W/MAIN	C	AC	1,605	25	40,125	34
MPAH	LAMPSON	100	W/ BASSWOOD	200 E/ O BASSWOOD	A	AC	200	56	11,200	88
MPAH	LAMPSON	200	E/BASSWOOD	W/ SEAL BEACH	A	AC	3,300	60	198,000	85
MPAH	LAMPSON	300	E/ E CITY LIMIT	200 E/ BASSWOOD	A	AC	7,400	60	444,000	73
MPAH	MARINA	100	E/PCH	6TH	C	AC	629	61	38,369	18
MPAH	MARINA	200	E/ 6TH	W/ W CITY LIMIT	C	AC	2,219	50	110,950	86
MPAH	OLD RANCH PARKWAY	100	SEAL BEACH	200 W/ SEAL BEACH	A	AC	520	48	24,960	88
MPAH	OLD RANCH PARKWAY	200	200 W/ SEAL BEACH	720 W/ SEAL BEACH	A	AC	200	64	12,800	88
MPAH	OLD RANCH PARKWAY	300	720 W/ SEAL BEACH	W/ 22 FWY	A	AC	1,030	34	35,020	91
MPAH	SEAL BEACH BLVD	100	S/ELECTRIC	N/PCH	A	AC	1,510	40	60,400	76
MPAH	SEAL BEACH BLVD	100	S/PCH	N/BOLSA	A	AC	1,640	97	159,080	81
MPAH	SEAL BEACH BLVD	200	S/BOLSA	N/ADOLFO LOPEZ	A	AC	3,320	99	328,680	83
MPAH	SEAL BEACH BLVD	300	S/ADOLFO LOPEZ	N/WESTMINSTER	A	AC	4,080	98	399,840	73
MPAH	SEAL BEACH BLVD	400	S/WESTMINSTER	NORTH GATE	A	AC	4,536	95	430,920	85
MPAH	SEAL BEACH BLVD	500	OLD RANCH PKY	O N/ LAMPSON	A	AC	833	89	74,137	77



City of Seal Beach  
2014 PMP  
2020 Projected PCI (MPAH)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
MPAH	SEAL BEACH BLVD	600	S/ LAMPSON	ST. CLOUD DR	A	AC	915	77	70,455	100
MPAH	SEAL BEACH BLVD	700	ST. CLOUD DR	PLYMOUTH	A	AC	1,491	77	114,807	100
MPAH	SEAL BEACH BLVD	800	S/ROSSMOOR	N/BRADBURY	A	AC	1,040	97	100,880	94
MPAH	WESTMINSTER	100	W/CITY LIMIT	E/SEAL BEACH	A	AC	4,360	79	344,440	52
MPAH	WESTMINSTER	200	E/BOLSA CHICA	W/SEAL BEACH	A	AC	10,610	72	763,920	30



City of Seal Beach  
2014 PMP  
Projected PCI with Treatments (MPAH)

2/25/2014

MPAH/Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	PCI After Treatment	Cost	Treatment Type
MPAH	1ST	100	S/OCEAN	N/MARINA	A	AC	887	40	35,480	83		
MPAH	1ST	200E	S/MARINA	N/PCH	A	AC	2,172	23	49,956	100	\$110,628	2" AC Overlay
MPAH	1ST	200W	S/ PCH	N/ MARINA	A	AC	2,172	22	47,784	100	\$102,736	2" AC Overlay
MPAH	1ST	300	N/PCH	597NE/PCH	A	AC	597	24	14,328	100	\$43,650	2" AC Overlay
MPAH	BOLSA	100	E/SEAL BEACH	W/BALBOA	C	AC	1,985	37	73,445	83		
MPAH	BOLSA	200	E/BALBOA	W/MAIN	C	AC	993	37	36,741	100	\$131,163	4" AC Overlay and Digouts
MPAH	ELECTRIC	100	E/ 5TH	W/ CORSAIR	C	AC	510	37	18,870	79		
MPAH	ELECTRIC	200	E/CORSAIR	W/END	C	AC	380	33	12,540	96	\$5,167	Slurry Seal
MPAH	ELECTRIC	300	E/SEAL BEACH	19 W/SEAL BEACH	C	AC	190	34	6,460	75		
MPAH	ELECTRIC N	100	E/MAIN	W/6TH	C	AC	960	27	25,920	100	\$124,623	4" AC Overlay and Digouts
MPAH	ELECTRIC N	200	E/SEAL BEACH	14TH	C	AC	820	27	22,140	79		
MPAH	ELECTRIC N	300	14TH	W/ MAIN	C	AC	1,590	27	42,930	89	\$19,327	Slurry Seal
MPAH	ELECTRIC S	100	E/6TH	W/MAIN	C	AC	910	25	22,750	100	\$32,610	2" AC Overlay
MPAH	ELECTRIC S	200	E/SEAL BEACH	14TH	C	AC	755	25	18,875	78		
MPAH	ELECTRIC S	300	14TH	W/MAIN	C	AC	1,605	25	40,125	34		
MPAH	LAMPSON	100	W/ BASSWOOD	200 E/ O BASSWOOD	A	AC	200	56	11,200	100	\$18,585	2" AC Overlay
MPAH	LAMPSON	200	E/BASSWOOD	W/ SEAL BEACH	A	AC	3,300	60	198,000	100	\$110,385	Slurry Seal
MPAH	LAMPSON	300	E/ E CITY LIMIT	200 E/ BASSWOOD	A	AC	7,400	60	444,000	73		
MPAH	MARINA	100	E/PCH	6TH	C	AC	629	61	38,369	18		
MPAH	MARINA	200	E/ 6TH	W/ W CITY LIMIT	C	AC	2,219	50	110,950	95	\$44,380	Slurry Seal
MPAH	OLD RANCH PARKWAY	100	SEAL BEACH	200 W/ SEAL BEACH	A	AC	520	48	24,960	100	\$113,119	4" AC Overlay and Digouts
MPAH	OLD RANCH PARKWAY	200	200 W/ SEAL BEACH	720 W/ SEAL BEACH	A	AC	200	64	12,800	100	\$33,003	2" AC Overlay
MPAH	OLD RANCH PARKWAY	300	720 W/ SEAL BEACH	W/ 22 FWY	A	AC	1,030	34	35,020	100	\$343,663	Reconstruction
MPAH	SEAL BEACH BLVD	100	S/ELECTRIC	N/PCH	A	AC	1,510	40	60,400	76		
MPAH	SEAL BEACH BLVD	100	S/PCH	N/BOLSA	A	AC	1,640	97	159,080	81		
MPAH	SEAL BEACH BLVD	200	S/BOLSA	N/ADOLFO LOPEZ	A	AC	3,320	99	328,680	83		
MPAH	SEAL BEACH BLVD	300	S/ADOLFO LOPEZ	N/WESTMINSTER	A	AC	4,080	98	399,840	73		
MPAH	SEAL BEACH BLVD	400	S/WESTMINSTER	NORTH GATE	A	AC	4,536	95	430,920	100	\$172,369	Slurry Seal
MPAH	SEAL BEACH BLVD	500	OLD RANCH PKY	O N/ LAMPSON	A	AC	833	89	74,137	77		
MPAH	SEAL BEACH BLVD	600	S/ LAMPSON	ST. CLOUD DR	A	AC	915	77	70,455	100	\$120,218	2" AC Overlay
MPAH	SEAL BEACH BLVD	700	ST. CLOUD DR	PLYMOUTH	A	AC	1,491	77	114,807	100	\$197,815	2" AC Overlay
MPAH	SEAL BEACH BLVD	800	S/ROSSMOOR	N/BRADBURY	A	AC	1,040	97	100,880	99	\$41,563	Slurry Seal
MPAH	WESTMINSTER	100	W/CITY LIMIT	E/SEAL BEACH	A	AC	4,360	79	344,440	52		
MPAH	WESTMINSTER	200	E/BOLSA CHICA	W/SEAL BEACH	A	AC	10,610	72	763,920	30		
									4,191,202		\$1,765,004	



City of Seal Beach  
2014 PMP  
2020 Projected PCI (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
Local	10TH	100	S/ELECTRIC	N/PCH	E	AC	660	40	26,400	85
Local	10TH	200	S/OCEAN	N/ELECTRIC	E	AC	950	40	38,000	79
Local	10TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	99
Local	11TH	200	S/ELECTRIC	N/LANDING	E	AC	210	37	7,770	50
Local	11TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	85
Local	11TH	400	S/OCEAN	N/ ELECTRIC	E	AC	900	40	36,000	81
Local	12TH	100	S/ELECTRIC	N/PCH	C	AC	860	37	31,820	79
Local	12TH	200	S/ OCEAN	N/ ELECTRIC	E	PCC	810	40	32,400	76
Local	12TH	300	S/SEAL	N/OCEAN	E	AC	210	24	5,040	85
Local	13TH	100	S/ELECTRIC	N/PCH	E	AC	960	21	20,160	38
Local	13TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	710	40	28,400	78
Local	13TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	85
Local	14TH	100	S/ELECTRIC	N/PCH	E	AC	1,010	21	21,210	26
Local	14TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	660	40	26,400	76
Local	14TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	52
Local	15TH	100	S/ELECTRIC	N/PCH	E	AC	1,110	21	23,310	17
Local	16TH	100	S/ELECTRIC	N/PCH	E	AC	1,160	21	24,360	46
Local	17TH	100	S/ELECTRIC	N/PCH	E	AC	1,260	21	26,460	64
Local	2ND	100	S/ OCEAN	N/ CENTRAL	E	AC	860	40	34,400	79
Local	3RD ST	100	S/ OCEAN	N/ CENTRAL	E	AC	760	40	30,400	81
Local	4TH ST	100	S/ OCEAN	N/ MARINA	E	AC	1,200	40	48,000	81
Local	5TH	100	S/MARINA	N/PCH	C	AC	660	60	39,600	85
Local	5TH	200	S/OCEAN	N/MARINA	E	AC	1,400	40	56,000	79
Local	6TH	100	S/OCEAN	N/ELECTRIC	E	AC	1,300	40	52,000	83
Local	7TH	100	S/ELECTRIC	N/MARINA	E	AC	210	40	8,400	79
Local	7TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,280	40	51,200	83
Local	8TH	100	S/ELECTRIC	N/PCH	E	AC	460	40	18,400	83
Local	8TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,150	40	46,000	83



City of Seal Beach  
2014 PMP  
2020 Projected PCI (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
Local	ADOLFO LOPEZ	100	W/END	425 E/SEAL BEACH	E	AC	800	60	48,000	99
Local	ADOLFO LOPEZ	200	W/SEAL BEACH	425 W/SEAL BEACH	E	AC	425	60	25,500	57
Local	AGUA	100	S/ MARLIN	N/ END	E	AC	220	27	5,940	75
Local	ALMOND	100	E/OLEANDER	W/ASTER	C	AC	4,390	36	158,040	80
Local	ALMOND	200	E/ VIOLET	ROSE CIR	C	AC	765	37	28,305	81
Local	ALMOND	300	ROSE CIR	W/ OLEANDER	C	AC	705	37	26,085	79
Local	ASTER	100	S/ ALMOND	N/ BIRCHWOOD	E	AC	1,239	37	45,843	83
Local	ASTER	200	N/ BIRCHWOOD	N/ CANDLEBERRY	E	AC	206	37	7,622	78
Local	AVALON	100	S/ CATALINA	N/ END	E	AC	430	33	14,190	78
Local	BALBOA	100	S/BOLSA	N/CATALINA	C	AC	1,060	37	39,220	21
Local	BALBOA	200	S/PCH	N/BOLSA	E	AC	660	37	24,420	83
Local	BANYAN	100	E/CAMELIA	W/COLUMBINE	E	AC	600	33	19,800	86
Local	BASSWOOD	100	E/ASTER	W/LAMPSON	C	AC	410	36	14,760	83
Local	BAYOU	100	E/BAYSIDE	W/HARBOR	E	AC	630	33	20,790	77
Local	BAYSIDE	100	S/BOLSA	N/CRESTVIEW	E	AC	1,410	33	46,530	76
Local	BEACHCOMBER	100	S/BOLSA	N/SEA BREEZE	E	AC	1,160	33	38,280	83
Local	BERYL COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	77
Local	BIRCHWOOD	100	E/ OLEANDER	W/ ASTER	E	AC	3,660	33	120,780	79
Local	BLUE BELL	100	S/ALMOND	N/BIRCHWOOD	E	AC	710	33	23,430	94
Local	CAMELIA	100	S/ALMOND	N/BANYAN	E	AC	590	33	19,470	77
Local	CANDLEBERRY	100	E/FUCHSIA	W/LAMPSON	E	AC	2,210	36	79,560	79
Local	CANDLEBERRY	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,560	37	57,720	83
Local	CANDLEBERRY	300	E/WISTERIA	W/OLEANDER	E	AC	1,660	33	54,780	85
Local	CARAVEL	100	S/ MARINA	N/ CORSAIR	E	AC	360	37	13,320	78
Local	CARMEL	100	E/ SURF	W/ COASTLINE	E	AC	360	37	13,320	77
Local	CARNATION	100	S/ALMOND	N/END	E	AC	230	33	7,590	85
Local	CATALINA	100	E/BALBOA	W/COASTLINE	E	AC	1,910	37	70,670	78
Local	CATALINA	200	E/END	W/BALBOA	E	AC	2,470	37	91,390	76



City of Seal Beach  
2014 PMP  
2020 Projected PCI (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
Local	CENTRAL	100	E/12TH	W/MAIN	C	AC	860	40	34,400	83
Local	CENTRAL	200	E/1ST	W/2ND	C	AC	260	20	5,200	83
Local	CENTRAL	300	E/2ND	W/MAIN	C	AC	2,160	40	86,400	83
Local	CENTRAL WY	100	E/ 2ND	W/ 1ST	E	AC	260	40	10,400	81
Local	CENTRAL WY	200	E/ 4TH	W/ 2ND	E	AC	560	38	21,280	81
Local	CENTRAL WY	300	E/ 5TH	W/ 4TH	E	AC	260	38	9,880	79
Local	CLIPPER	100	E/ CARAVEL	W/ ELECTRIC	E	AC	910	33	30,030	78
Local	CLOVER	100	S/ALMOND	N/END	E	AC	130	33	4,290	81
Local	COASTLINE	100	S/CARMEL	N/END	E	AC	480	27	12,960	76
Local	COASTLINE	200	E/CARMEL	W/BALBOA	E	AC	2,380	33	78,540	82
Local	COLLEGE PARK	100	E/HARVARD	W/HARVARD	C	AC	2,590	37	95,830	100
Local	COLLEGE PARK	200	E/HARVARD	W/CITY LIMIT	C	AC	940	44	41,360	88
Local	COLUMBINE	100	S/ALMOND	N/BANYAN	E	AC	210	33	6,930	78
Local	CORAL	100	E/ END	W/ BAY VIEW	E	AC	230	27	6,210	74
Local	CORSAIR	100	S/CARAVEL	N/SCHOONER	E	AC	1,020	33	33,660	77
Local	CREST	100	S/CATALINA	N/CRESTVIEW	E	AC	210	33	6,930	75
Local	CRESTVIEW	100	E/ CATALINA	W/ AVALON	E	AC	3,060	33	100,980	77
Local	CRYSTAL	100	S/ CRYSTAL COVE	N/ END	E	AC	240	27	6,480	77
Local	CRYSTAL COVE	100	E/ MARBLE COVE	W/ OPAL COVE	E	AC	520	33	17,160	77
Local	DAFFODIL	100	S/ALMOND	N/END	E	AC	230	33	7,590	85
Local	DAHLIA	100	S/ALMOND	N/END	E	AC	230	33	7,590	85
Local	DAISY	100	S/ALMOND	N/BIRCHWOOD	E	AC	410	33	13,530	53
Local	DAISY	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	210	33	6,930	85
Local	DAISY CIRCLE	100	S/FIR	N/END	E	AC	230	33	7,590	97
Local	DARTMOUTH	100	E/END	W/HARVARD	E	AC	180	34	6,120	97
Local	DOGWOOD	100	E/DAISY	W/IRONWOOD	E	AC	1,470	33	48,510	78
Local	DOGWOOD	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,520	33	50,160	77
Local	DOGWOOD	300	E/WISTERIA	W/OLEANDER	E	AC	1,710	33	56,430	64





City of Seal Beach  
2014 PMP  
2020 Projected PCI (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	2020 Projected PCI
Local	DOLPHIN	100	S/SEAL WAY	N/ OCEAN	E	AC	226	24	5,424	64
Local	DOLPHIN	200	N/ OCEAN	N/ ELECTRIC	E	AC	582	24	13,968	81
Local	DORY	100	S/GALLEON	N/SCHOONER	E	AC	360	28	10,080	75
Local	DRIFTWOOD	100	E/BALBOA	W/COASTLINE	E	AC	1,460	33	48,180	81
Local	EBBTIDE	100	S/ COASTLINE	N/ END	E	AC	230	27	6,210	77
Local	ELDER	100	HEATHER	W/IRONWOOD	E	AC	2,002	36	72,072	83
Local	ELDER	200	E/OLEANDER	HEATHER	E	AC	1,130	36	40,680	81
Local	ELDER	300	E/VIOLET	W/PRIMROSE	E	AC	1,380	33	45,540	79
Local	EMERALD COVE	100	E/ BERYL COVE	W/ JADE COVE	E	AC	580	33	19,140	77
Local	EMERALD PL	100	S/ EMERALD COVE	N/ END	E	AC	230	27	6,210	77
Local	FATHOM	100	E/SILVER SHOALS	W/BALBOA	E	AC	810	33	26,730	81
Local	FERN	100	S/ALMOND	N/END	E	AC	230	33	7,590	75
Local	FIR	100	E/GOLDENROD	W/IRONWOOD	E	AC	1,460	33	48,180	81
Local	FIR	200	E/ROSE	W/HEATHER	E	AC	1,260	33	41,580	85
Local	FIR	300	E/SUNFLOWER	W/ROSE	E	AC	330	33	10,890	83
Local	FIR	400	E/WISTERIA	W/SUNFLOWER	E	AC	1,220	33	40,260	83
Local	FIR CIRCLE	100	S/FIR	N/END	E	AC	130	60	7,800	83
Local	FUCHSIA	100	S/BIRCHWOOD	N/ELDER	E	AC	640	33	21,120	83
Local	FUCHSIA CIRCLE	100	S/FIR	N/END	E	AC	330	33	10,890	81
Local	GALLEON	100	S/ELECTRIC	N/DORY	E	AC	970	33	32,010	88
Local	GOLDENROD	100	S/ALMOND	N/END	E	AC	230	33	7,590	78
Local	GOLDENROD	200	S/ELDER	N/END	E	AC	610	33	20,130	81
Local	GUAVA	100	E/IRONWOOD	W/END	E	AC	530	33	17,490	81
Local	GUAVA	200	E/PANSY	W/HEATHER	E	AC	1,360	33	44,880	81
Local	HARBOR	100	S/BAYSIDE	N/BAYOU	E	AC	760	33	25,080	14
Local	HARVARD	100	S/COLLEGE PARK	W/END	E	AC	3,310	37	122,470	75
Local	HAZELNUT	100	S/GUAVA	N/HEATHER	E	AC	1,210	33	39,930	81
Local	HAZELNUT	200	E/HEATHER	W/ROSE	E	AC	1,610	33	53,130	99



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Local	HAZELNUT	300	E/WISTERIA	W/SUNFLOWER	E	AC	1,310	33	43,230	38
Local	HEATHER	100	S/ALMOND	N/END	E	AC	230	33	7,590	78
Local	HEATHER	200	S/ELDER	N/HAZELNUT	C	AC	790	37	29,230	81
Local	HEATHER	300	S/HAZELNUT	N/LAMPSON	C	AC	490	37	18,130	94
Local	IRIS	100	S/ALMOND	N/END	E	AC	230	33	7,590	97
Local	IRIS	200	HAZELNUT AVE	IRONWOOD AVE	E	AC	226	32	7,232	29
Local	IRONWOOD	50	S/CANDLEBERRY	ELDER	C	AC	524	33	17,292	83
Local	IRONWOOD	100	ELDER	N/HEATHER	C	AC	1,967	33	64,911	83
Local	IRONWOOD	200	E/ROSE	W/IRIS	C	AC	1,420	33	46,860	97
Local	IRONWOOD	300	E/ WISTERIA	W/ TULIP	C	AC	322	37	11,914	83
Local	IRONWOOD	400	W/ TULIP	W/ SUNFLOWER	C	AC	1,020	37	37,740	34
Local	ISLAND VIEW	100	S/BOLSA	N/SEA BREEZE	E	AC	1,110	33	36,630	83
Local	JADE COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	83
Local	JASMIN	100	S/ALMOND	N/END	E	AC	230	33	7,590	76
Local	LAGUNA	100	0 S/ MARLIN	0 N/ END	E	AC	380	27	10,260	78
Local	LANDING	100	E/12TH	W/11TH	E	AC	260	42	10,920	34
Local	LANDING	200	E/SEAL BEACH	W/12TH	E	AC	1,210	21	25,410	83
Local	LOYOLA PLAZA	100	S/COLLEGE PARK	N/END	E	AC	330	25	8,250	85
Local	MAIN	100	S/ELECTRIC	N/PCH	C	AC	690	55	37,950	94
Local	MAIN	200	S/OCEAN AVE	N/ELECTRIC	C	AC	1,190	57	67,830	87
Local	MAR VISTA	100	E/ CATALINA	W/ COASTLINE	E	AC	1,610	33	53,130	81
Local	MAR VISTA	200	W/COASTLINE	PCH	E	AC	123	36	4,428	81
Local	MARBLE COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	78
Local	MARIGOLD	100	S/BIRCHWOOD	N/CANDLEBERRY	E	AC	160	33	5,280	97
Local	MARIGOLD	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	160	33	5,280	75
Local	MARINE	100	E/ELECTRIC	W/DOLPHIN	E	AC	320	24	7,680	99
Local	MARLIN	100	E/SEAL BEACH	W/BALBOA	E	AC	1,610	37	59,570	77
Local	NEPTUNE	100	S/SEAL	N/OCEAN	E	AC	210	24	5,040	75



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Local	NORTH GATE	100	W/SEAL BEACH	76 W/SEAL BEACH	E	AC	760	42	31,920	78
Local	NORTH GATE	200	76 E/SEAL BEACH	W/END	E	AC	3,300	25	82,500	83
Local	OCCIDENTAL	100	E/ STANFORD	W/ HARVARD	E	AC	160	33	5,280	88
Local	OCEAN	100	E/ELECTRIC	W/MAIN	C	AC	2,440	51	124,440	99
Local	OCEAN	200	E/MAIN	W/1ST	C	AC	2,490	52	129,480	74
Local	OLEANDER	100	S/ALMOND	N/FIR	E	AC	1,320	36	47,520	50
Local	OPAL COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	78
Local	PANSY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	99
Local	PANSY	200	S/FIR	N/GUAVA	E	AC	160	33	5,280	81
Local	PRIMROSE	100	S/DOGWOOD	N/ELDER	E	AC	210	33	6,930	77
Local	PRIMROSE CIR	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	75
Local	PRINCETON	100	E/END	W/HARVARD	E	AC	230	30	6,900	57
Local	PURDUE CIRCLE	100	S/ END	N/ COLLEGE PARK	E	AC	68	27	1,836	88
Local	RIVIERA	100	S/MARLIN	N/BOLSA	E	AC	560	31	17,360	77
Local	ROSE	100	S/ ALMOND	N/ END	C	AC	430	33	14,190	75
Local	ROSE	200	S/FIR	N/HAZELNUT	C	AC	390	37	14,430	81
Local	ROSE	300	S/HAZELNUT	N/LAMPSON	C	AC	440	37	16,280	81
Local	ROSSMOOR CTR	100	E/SEAL BEACH	W/ WEST RD	C	AC	864	30	25,920	85
Local	ROSSMOOR CTR	200	E/ WEST RD	W/ MONTECITO	C	AC	364	28	10,192	94
Local	SAND PIPER	100	S/BOLSA	N/TAPER	E	AC	1,110	33	36,630	83
Local	SCHOONER	100	E/GALLEON	W/DORY	E	AC	660	33	21,780	80
Local	SEA BREEZE	100	S/BOLSA	N/CATALINA	E	AC	1,160	33	38,280	83
Local	SEAL	100	E/ 11TH	W/ 10TH	E	PCC	290	15	4,350	94
Local	SEAL WAY	100	E/ELECTRIC	W/14TH	E	PCC	1,240	13	16,120	97
Local	SEAL WAY	200	E/14TH	W/11TH	E	PCC	920	12	11,040	83
Local	SILVER SHOALS	100	S/BOLSA	N/FATHOM	E	AC	300	33	9,900	21
Local	SOUTH SHORE	100	S/BOLSA	N/TAPER	E	AC	1,060	33	34,980	83
Local	STANFORD	100	N/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,860	32	59,520	83



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Local	SUNFLOWER	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	81
Local	SUNFLOWER	200	S/FIR	N/IRONWOOD	E	AC	560	37	20,720	37
Local	SURF	100	S/ CATALINA	N/ END	E	AC	480	33	15,840	78
Local	TAPER	100	S/BOLSA	N/CATALINA	E	AC	1,110	33	36,630	83
Local	TEABERRY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	79
Local	TULIP	100	S/IRONWOOD	N/LAMPSON	E	AC	70	36	2,520	83
Local	VIOLET	100	S/ ALMOND	N/ CANDLEBERRY	E	AC	660	33	21,780	79
Local	VIOLET	200	S/ELDER	N/FIR	E	AC	160	33	5,280	42
Local	WISTERIA	100	S/DOGWOOD	N/IRONWOOD	E	AC	990	37	36,630	80
Local	WISTERIA	200	S/END	N/DOGWOOD	E	AC	1,040	33	34,320	79
Local	YALE	100	E/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,160	33	38,280	97
Local	YALE CIRCLE	100	E/END	W/YALE	E	AC	130	48	6,240	82



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Local	10TH	100	S/ELECTRIC	N/PCH	E	AC	660	40	26,400	100	\$ 10,560.00	Slurry Seal
Local	10TH	200	S/OCEAN	N/ELECTRIC	E	AC	950	40	38,000	79		
Local	10TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	100	\$ 13,085.00	2" AC Overlay
Local	11TH	200	S/ELECTRIC	N/LANDING	E	AC	210	37	7,770	50		
Local	11TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	100	\$ 2,100.00	Slurry Seal
Local	11TH	400	S/OCEAN	N/ ELECTRIC	E	AC	900	40	36,000	81		
Local	12TH	100	S/ELECTRIC	N/PCH	C	AC	860	37	31,820	79		
Local	12TH	200	S/ OCEAN	N/ ELECTRIC	E	PCC	810	40	32,400	76		
Local	12TH	300	S/SEAL	N/OCEAN	E	AC	210	24	5,040	100	\$ 2,801.00	Slurry Seal
Local	13TH	100	S/ELECTRIC	N/PCH	E	AC	960	21	20,160	38		
Local	13TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	710	40	28,400	78		
Local	13TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	100	\$ 2,100.00	Slurry Seal
Local	14TH	100	S/ELECTRIC	N/PCH	E	AC	1,010	21	21,210	26		
Local	14TH	200	S/ OCEAN	N/ ELECTRIC	E	AC	660	40	26,400	76		
Local	14TH	300	S/SEAL	N/OCEAN	E	AC	210	25	5,250	52		
Local	15TH	100	S/ELECTRIC	N/PCH	E	AC	1,110	21	23,310	17		
Local	16TH	100	S/ELECTRIC	N/PCH	E	AC	1,160	21	24,360	46		
Local	17TH	100	S/ELECTRIC	N/PCH	E	AC	1,260	21	26,460	64		
Local	2ND	100	S/ OCEAN	N/ CENTRAL	E	AC	860	40	34,400	79		
Local	3RD ST	100	S/ OCEAN	N/ CENTRAL	E	AC	760	40	30,400	81		
Local	4TH ST	100	S/ OCEAN	N/ MARINA	E	AC	1,200	40	48,000	81		
Local	5TH	100	S/MARINA	N/PCH	C	AC	660	60	39,600	100	\$ 15,840.00	Slurry Seal
Local	5TH	200	S/OCEAN	N/MARINA	E	AC	1,400	40	56,000	88	\$ 24,477.00	Slurry Seal
Local	6TH	100	S/OCEAN	N/ELECTRIC	E	AC	1,300	40	52,000	83		
Local	7TH	100	S/ELECTRIC	N/MARINA	E	AC	210	40	8,400	79		
Local	7TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,280	40	51,200	83		
Local	8TH	100	S/ELECTRIC	N/PCH	E	AC	460	40	18,400	83		
Local	8TH	200	S/OCEAN	N/ELECTRIC	E	AC	1,150	40	46,000	83		
Local	ADOLFO LOPEZ	100	W/END	425 E/SEAL BEACH	E	AC	800	60	48,000	100	\$ 119,637.00	2" AC Overlay
Local	ADOLFO LOPEZ	200	W/SEAL BEACH	425 W/SEAL BEACH	E	AC	425	60	25,500	57		
Local	AGUA	100	S/ MARLIN	N/ END	E	AC	220	27	5,940	75		
Local	ALMOND	100	E/OLEANDER	W/ASTER	C	AC	4,390	36	158,040	92	\$ 67,066.00	Slurry Seal
Local	ALMOND	200	E/ VIOLET	ROSE CIR	C	AC	765	37	28,305	81		
Local	ALMOND	300	ROSE CIR	W/ OLEANDER	C	AC	705	37	26,085	79		
Local	ASTER	100	S/ ALMOND	N/ BIRCHWOOD	E	AC	1,239	37	45,843	83		
Local	ASTER	200	N/ BIRCHWOOD	N/ CANDLEBERRY	E	AC	206	37	7,622	78		
Local	AVALON	100	S/ CATALINA	N/ END	E	AC	430	33	14,190	78		
Local	BALBOA	100	S/BOLSA	N/CATALINA	C	AC	1,060	37	39,220	21		



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Local	BALBOA	200	S/PCH	N/BOLSA	E	AC	660	37	24,420	83		
Local	BANYAN	100	E/CAMELIA	W/COLUMBINE	E	AC	600	33	19,800	95	\$ 7,920.00	Slurry Seal
Local	BASSWOOD	100	E/ASTER	W/LAMPSON	C	AC	410	36	14,760	83		
Local	BAYOU	100	E/BAYSIDE	W/HARBOR	E	AC	630	33	20,790	77		
Local	BAYSIDE	100	S/BOLSA	N/CRESTVIEW	E	AC	1,410	33	46,530	76		
Local	BEACHCOMBER	100	S/BOLSA	N/SEA BREEZE	E	AC	1,160	33	38,280	83		
Local	BERYL COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	77		
Local	BIRCHWOOD	100	E/ OLEANDER	W/ ASTER	E	AC	3,660	33	120,780	79		
Local	BLUE BELL	100	S/ALMOND	N/BIRCHWOOD	E	AC	710	33	23,430	100	\$ 55,046.00	2" AC Overlay
Local	CAMELIA	100	S/ALMOND	N/BANYAN	E	AC	590	33	19,470	89	\$ 8,262.00	Slurry Seal
Local	CANDLEBERRY	100	E/FUCHSIA	W/LAMPSON	E	AC	2,210	36	79,560	79		
Local	CANDLEBERRY	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,560	37	57,720	83		
Local	CANDLEBERRY	300	E/WISTERIA	W/OLEANDER	E	AC	1,660	33	54,780	85	\$ 26,164.00	Slurry Seal
Local	CARAVEL	100	S/ MARINA	N/ CORSAIR	E	AC	360	37	13,320	78		
Local	CARMEL	100	E/ SURF	W/ COASTLINE	E	AC	360	37	13,320	77		
Local	CARNATION	100	S/ALMOND	N/END	E	AC	230	33	7,590	94	\$ 3,036.00	Slurry Seal
Local	CATALINA	100	E/BALBOA	W/COASTLINE	E	AC	1,910	37	70,670	78		
Local	CATALINA	200	E/END	W/BALBOA	E	AC	2,470	37	91,390	76		
Local	CENTRAL	100	E/12TH	W/MAIN	C	AC	860	40	34,400	83		
Local	CENTRAL	200	E/1ST	W/2ND	C	AC	260	20	5,200	83		
Local	CENTRAL	300	E/2ND	W/MAIN	C	AC	2,160	40	86,400	83		
Local	CENTRAL WY	100	E/ 2ND	W/ 1ST	E	AC	260	40	10,400	81		
Local	CENTRAL WY	200	E/ 4TH	W/ 2ND	E	AC	560	38	21,280	81		
Local	CENTRAL WY	300	E/ 5TH	W/ 4TH	E	AC	260	38	9,880	79		
Local	CLIPPER	100	E/ CARAVEL	W/ ELECTRIC	E	AC	910	33	30,030	78		
Local	CLOVER	100	S/ALMOND	N/END	E	AC	130	33	4,290	81		
Local	COASTLINE	100	S/CARMEL	N/END	E	AC	480	27	12,960	76		
Local	COASTLINE	200	E/CARMEL	W/BALBOA	E	AC	2,380	33	78,540	88	\$ 35,359.00	Slurry Seal
Local	COLLEGE PARK	100	E/HARVARD	W/HARVARD	C	AC	2,590	37	95,830	100	\$ 150,500.00	2" AC Overlay
Local	COLLEGE PARK	200	E/HARVARD	W/CITY LIMIT	C	AC	940	44	41,360	100	\$ 91,592.00	2" AC Overlay
Local	COLUMBINE	100	S/ALMOND	N/BANYAN	E	AC	210	33	6,930	90	\$ 2,941.00	Slurry Seal
Local	CORAL	100	E/ END	W/ BAY VIEW	E	AC	230	27	6,210	74		
Local	CORSAIR	100	S/CARAVEL	N/SCHOONER	E	AC	1,020	33	33,660	77		
Local	CREST	100	S/CATALINA	N/CRESTVIEW	E	AC	210	33	6,930	75		
Local	CRESTVIEW	100	E/ CATALINA	W/ AVALON	E	AC	3,060	33	100,980	77		
Local	CRYSTAL	100	S/ CRYSTAL COVE	N/ END	E	AC	240	27	6,480	77		
Local	CRYSTAL COVE	100	E/ MARBLE COVE	W/ OPAL COVE	E	AC	520	33	17,160	77		
Local	DAFFODIL	100	S/ALMOND	N/END	E	AC	230	33	7,590	94	\$ 3,036.00	Slurry Seal

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Local	DAHLIA	100	S/ALMOND	N/END	E	AC	230	33	7,590	94	\$ 3,318.00	Slurry Seal
Local	DAISY	100	S/ALMOND	N/BIRCHWOOD	E	AC	410	33	13,530	53		
Local	DAISY	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	210	33	6,930	100	\$ 5,113.00	Slurry Seal
Local	DAISY CIRCLE	100	S/FIR	N/END	E	AC	230	33	7,590	100	\$ 18,367.00	2" AC Overlay
Local	DARTMOUTH	100	E/END	W/HARVARD	E	AC	180	34	6,120	100	\$ 11,193.00	2" AC Overlay
Local	DOGWOOD	100	E/DAISY	W/IRONWOOD	E	AC	1,470	33	48,510	87	\$ 21,203.00	Slurry Seal
Local	DOGWOOD	200	E/MARIGOLD	W/FUCHSIA	E	AC	1,520	33	50,160	89	\$ 21,286.00	Slurry Seal
Local	DOGWOOD	300	E/WISTERIA	W/OLEANDER	E	AC	1,710	33	56,430	64		
Local	DOLPHIN	100	S/SEAL WAY	N/ OCEAN	E	AC	226	24	5,424	64		
Local	DOLPHIN	200	N/ OCEAN	N/ ELECTRIC	E	AC	582	24	13,968	87	\$ 6,288.00	Slurry Seal
Local	DORY	100	S/GALLEON	N/SCHOONER	E	AC	360	28	10,080	75		
Local	DRIFTWOOD	100	E/BALBOA	W/COASTLINE	E	AC	1,460	33	48,180	81		
Local	EBBTIDE	100	S/ COASTLINE	N/ END	E	AC	230	27	6,210	77		
Local	ELDER	100	HEATHER	W/IRONWOOD	E	AC	2,002	36	72,072	83		
Local	ELDER	200	E/OLEANDER	HEATHER	E	AC	1,130	36	40,680	81		
Local	ELDER	300	E/VIOLET	W/PRIMROSE	E	AC	1,380	33	45,540	88	\$ 19,905.00	Slurry Seal
Local	EMERALD COVE	100	E/ BERYL COVE	W/ JADE COVE	E	AC	580	33	19,140	77		
Local	EMERALD PL	100	S/ EMERALD COVE	N/ END	E	AC	230	27	6,210	77		
Local	FATHOM	100	E/SILVER SHOALS	W/BALBOA	E	AC	810	33	26,730	81		
Local	FERN	100	S/ALMOND	N/END	E	AC	230	33	7,590	75		
Local	FIR	100	E/GOLDENROD	W/IRONWOOD	E	AC	1,460	33	48,180	81		
Local	FIR	200	E/ROSE	W/HEATHER	E	AC	1,260	33	41,580	100	\$ 30,676.00	Slurry Seal
Local	FIR	300	E/SUNFLOWER	W/ROSE	E	AC	330	33	10,890	83		
Local	FIR	400	E/WISTERIA	W/SUNFLOWER	E	AC	1,220	33	40,260	83		
Local	FIR CIRCLE	100	S/FIR	N/END	E	AC	130	60	7,800	83		
Local	FUCHSIA	100	S/BIRCHWOOD	N/ELDER	E	AC	640	33	21,120	83		
Local	FUCHSIA CIRCLE	100	S/FIR	N/END	E	AC	330	33	10,890	81		
Local	GALLEON	100	S/ELECTRIC	N/DORY	E	AC	970	33	32,010	100	\$ 48,384.00	2" AC Overlay
Local	GOLDENROD	100	S/ALMOND	N/END	E	AC	230	33	7,590	78		
Local	GOLDENROD	200	S/ELDER	N/END	E	AC	610	33	20,130	81		
Local	GUAVA	100	E/IRONWOOD	W/END	E	AC	530	33	17,490	81		
Local	GUAVA	200	E/PANSY	W/HEATHER	E	AC	1,360	33	44,880	81		
Local	HARBOR	100	S/BAYSIDE	N/BAYOU	E	AC	760	33	25,080	14		
Local	HARVARD	100	S/COLLEGE PARK	W/END	E	AC	3,310	37	122,470	75		
Local	HAZELNUT	100	S/GUAVA	N/HEATHER	E	AC	1,210	33	39,930	81		
Local	HAZELNUT	200	E/HEATHER	W/ROSE	E	AC	1,610	33	53,130	100	\$ 97,393.00	2" AC Overlay
Local	HAZELNUT	300	E/WISTERIA	W/SUNFLOWER	E	AC	1,310	33	43,230	38		
Local	HEATHER	100	S/ALMOND	N/END	E	AC	230	33	7,590	78		



City of Seal Beach  
2014 PMP  
Projected PCI with Treatments (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	PCI After Treatment	Cost	Treatment Type
Local	HEATHER	200	S/ELDER	N/HAZELNUT	C	AC	790	37	29,230	81		
Local	HEATHER	300	S/HAZELNUT	N/LAMPSON	C	AC	490	37	18,130	100	\$ 7,252.00	Slurry Seal
Local	IRIS	100	S/ALMOND	N/END	E	AC	230	33	7,590	100	\$ 11,251.00	2" AC Overlay
Local	IRIS	200	HAZELNUT AVE	IRONWOOD AVE	E	AC	226	32	7,232	29		
Local	IRONWOOD	050	S/CANDLEBERRY	ELDER	C	AC	524	33	17,292	83		
Local	IRONWOOD	100	ELDER	N/HEATHER	C	AC	1,967	33	64,911	83		
Local	IRONWOOD	200	E/ROSE	W/IRIS	C	AC	1,420	33	46,860	100	\$ 318,009.00	Reconstruction
Local	IRONWOOD	300	E/ WISTERIA	W/ TULIP	C	AC	322	37	11,914	83		
Local	IRONWOOD	400	W/ TULIP	W/ SUNFLOWER	C	AC	1,020	37	37,740	34		
Local	ISLAND VIEW	100	S/BOLSA	N/SEA BREEZE	E	AC	1,110	33	36,630	83		
Local	JADE COVE	100	S/ EMERALD COVE	N/ MARLIN	E	AC	360	33	11,880	86	\$ 5,509.00	Slurry Seal
Local	JASMIN	100	S/ALMOND	N/END	E	AC	230	33	7,590	76		
Local	LAGUNA	100	O S/ MARLIN	O N/ END	E	AC	380	27	10,260	78		
Local	LANDING	100	E/12TH	W/11TH	E	AC	260	42	10,920	34		
Local	LANDING	200	E/SEAL BEACH	W/12TH	E	AC	1,210	21	25,410	83		
Local	LOYOLA PLAZA	100	S/COLLEGE PARK	N/END	E	AC	330	25	8,250	100	\$ 6,101.00	Slurry Seal
Local	MAIN	100	S/ELECTRIC	N/PCH	C	AC	690	55	37,950	100	\$ 167,628.00	4" AC Overlay and Digouts
Local	MAIN	200	S/OCEAN AVE	N/ELECTRIC	C	AC	1,190	57	67,830	96	\$ 27,132.00	Slurry Seal
Local	MAR VISTA	100	E/ CATALINA	W/ COASTLINE	E	AC	1,610	33	53,130	81		
Local	MAR VISTA	200	W/COASTLINE	PCH	E	AC	123	36	4,428	81		
Local	MARBLE COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	78		
Local	MARIGOLD	100	S/BIRCHWOOD	N/CANDLEBERRY	E	AC	160	33	5,280	100	\$ 12,777.00	2" AC Overlay
Local	MARIGOLD	200	S/CANDLEBERRY	N/DOGWOOD	E	AC	160	33	5,280	92	\$ 2,112.00	Slurry Seal
Local	MARINE	100	E/ELECTRIC	W/DOLPHIN	E	AC	320	24	7,680	100	\$ 11,679.00	2" AC Overlay
Local	MARLIN	100	E/SEAL BEACH	W/BALBOA	E	AC	1,610	37	59,570	77		
Local	NEPTUNE	100	S/SEAL	N/OCEAN	E	AC	210	24	5,040	75		
Local	NORTH GATE	100	W/SEAL BEACH	76 W/SEAL BEACH	E	AC	760	42	31,920	78		
Local	NORTH GATE	200	76 E/SEAL BEACH	W/END	E	AC	3,300	25	82,500	83		
Local	OCCIDENTAL	100	E/ STANFORD	W/ HARVARD	E	AC	160	33	5,280	100	\$ 7,248.00	2" AC Overlay
Local	OCEAN	100	E/ELECTRIC	W/MAIN	C	AC	2,440	51	124,440	100	\$ 210,945.00	2" AC Overlay
Local	OCEAN	200	E/MAIN	W/1ST	C	AC	2,490	52	129,480	74		
Local	OLEANDER	100	S/ALMOND	N/FIR	E	AC	1,320	36	47,520	50		
Local	OPAL COVE	100	S/ CRYSTAL COVE	N/ MARLIN	E	AC	360	33	11,880	78		
Local	PANSY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	100	\$ 21,838.00	2" AC Overlay
Local	PANSY	200	S/FIR	N/GUAVA	E	AC	160	33	5,280	81		
Local	PRIMROSE	100	S/DOGWOOD	N/ELDER	E	AC	210	33	6,930	77		
Local	PRIMROSE CIR	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	75		
Local	PRINCETON	100	E/END	W/HARVARD	E	AC	230	30	6,900	57		





City of Seal Beach  
2014 PMP  
Projected PCI with Treatments (Locals)

2/25/2014

MPAH/ Local	Name	Section ID	From	To	Section Rank	Surface Type	Length (ft)	Width (ft)	Area (sf)	PCI After Treatment	Cost	Treatment Type
Local	PURDUE CIRCLE	100	S/ END	N/ COLLEGE PARK	E	AC	68	27	1,836	100	\$ 8,142.00	4" AC Overlay and Digouts
Local	RIVIERA	100	S/MARLIN	N/BOLSA	E	AC	560	31	17,360	77		
Local	ROSE	100	S/ ALMOND	N/ END	C	AC	430	33	14,190	75		
Local	ROSE	200	S/FIR	N/HAZELNUT	C	AC	390	37	14,430	81		
Local	ROSE	300	S/HAZELNUT	N/LAMPSON	C	AC	440	37	16,280	81		
Local	ROSSMOOR CTR	100	E/SEAL BEACH	W/ WEST RD	C	AC	864	30	25,920	100	\$ 10,368.00	Slurry Seal
Local	ROSSMOOR CTR	200	E/ WEST RD	W/ MONTECITO	C	AC	364	28	10,192	100	\$ 83,627.00	Reconstruction
Local	SAND PIPER	100	S/BOLSA	N/TAPER	E	AC	1,110	33	36,630	83		
Local	SCHOONER	100	E/GALLEON	W/DORY	E	AC	660	33	21,780	86	\$ 9,806.00	Slurry Seal
Local	SEA BREEZE	100	S/BOLSA	N/CATALINA	E	AC	1,160	33	38,280	83		
Local	SEAL	100	E/ 11TH	W/ 10TH	E	PCC	290	15	4,350	100	\$ 10,220.00	2" AC Overlay
Local	SEAL WAY	100	E/ELECTRIC	W/14TH	E	PCC	1,240	13	16,120	100	\$ 23,704.00	2" AC Overlay
Local	SEAL WAY	200	E/14TH	W/11TH	E	PCC	920	12	11,040	83		
Local	SILVER SHOALS	100	S/BOLSA	N/FATHOM	E	AC	300	33	9,900	21		
Local	SOUTH SHORE	100	S/BOLSA	N/TAPER	E	AC	1,060	33	34,980	83		
Local	STANFORD	100	N/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,860	32	59,520	89	\$ 26,796.00	Slurry Seal
Local	SUNFLOWER	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	81		
Local	SUNFLOWER	200	S/FIR	N/IRONWOOD	E	AC	560	37	20,720	37		
Local	SURF	100	S/ CATALINA	N/ END	E	AC	480	33	15,840	78		
Local	TAPER	100	S/BOLSA	N/CATALINA	E	AC	1,110	33	36,630	83		
Local	TEABERRY	100	S/ ALMOND	N/ END	E	AC	430	33	14,190	79		
Local	TULIP	100	S/IRONWOOD	N/LAMPSON	E	AC	70	36	2,520	83		
Local	VIOLET	100	S/ ALMOND	N/ CANDLEBERRY	E	AC	660	33	21,780	79		
Local	VIOLET	200	S/ELDER	N/FIR	E	AC	160	33	5,280	42		
Local	WISTERIA	100	S/DOGWOOD	N/IRONWOOD	E	AC	990	37	36,630	89	\$ 16,011.00	Slurry Seal
Local	WISTERIA	200	S/END	N/DOGWOOD	E	AC	1,040	33	34,320	88	\$ 15,001.00	Slurry Seal
Local	YALE	100	E/COLLEGE PARK	W/COLLEGE PARK	E	AC	1,160	33	38,280	100	\$ 67,826.00	2" AC Overlay
Local	YALE CIRCLE	100	E/END	W/YALE	E	AC	130	48	6,240	91	\$ 2,496.00	Slurry Seal
									5,259,654		\$ 2,008,126.00	

## Appendix F

# Seven-Year Plan for Road Maintenance and Rehabilitation



City of Seal Beach  
2014 PMS Update  
Arterial Resurfacing Program

2/25/2014

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2013-2014	WESTMINSTER	200	E/BOLSA CHICA	W/SEAL BEACH	10,610	72	763,920	29	\$ 7,073,899	R & R	
									Total	\$ 7,073,899	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2014-2015	ELECTRIC S	300	14TH	W/MAIN	1,605	25	40,125	29	\$ 371,558	R & R	
									Total	\$ 371,558	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2015-2016	WESTMINSTER	100	W/CITY LIMIT	E/SEAL BEACH	4,360	79	344,440	70	\$ 1,515,536	Cold Mill & Fill (4" AC)	
									Total	\$ 1,515,536	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2016-2017	1ST	200W	S/PCH	N/MARINA	2,172	22	47,784	41	\$ 442,480	R & R	
2016-2017	ELECTRIC S	100	E/6TH	W/MAIN	910	25	22,750	63	\$ 100,100	Cold Mill & Fill (4" AC)	
									Total	\$ 542,580	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2017-2018	OLD RANCH PARKWAY	100	SEAL BEACH	200 W/ SEAL BEACH	520	48	24,960	69	\$ 109,824	Cold Mill & Fill (4" AC)	
2017-2018	OLD RANCH PARKWAY	300	BEACH	W/22 FWY	1,030	34	35,020	24	\$ 324,285	R & R	
									Total	\$ 434,109	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2018-2019	ROSSMOOR CTR	200	E/WEST RD	W/MONTECITO	364	28	10,192	37	\$ 94,378	R & R	
									Total	\$ 94,378	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2019-2020	MAIN ST	100	S/ELECTRIC	N/PCI	690	55	37,950	55	\$ 166,980	Cold Mill & Fill (4" AC)	
2019-2020	MAIN ST	200	S/OCEAN AVE	N/ELECTRIC	1,190	57	67,830	37	\$ 628,106	R & R	
									Total	\$ 795,086	

Year	Street Name	Section ID	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI Before Treatment	Treatment Cost	Treatment	
2020-2021	LAMPSON	100	W/BASSWOOD	200' E/BASSWOOD	200	56	11,200	77	\$ 49,280	Cold Mill & Fill (4" AC)	
									Total	\$ 49,280	

Grand Total	23,651	1,406,171	\$ 10,876,425
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Local Street Resurfacing Program

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2014-2015	11TH	S/ELECTRIC	N/LANDING	210	37	7,770	47	\$19,814	Cold Mill & Fill (2" AC)
2014-2015	13TH	S/ELECTRIC	N/PCH	960	21	20,160	35	\$51,408	Cold Mill & Fill (2" AC)
2014-2015	BALBOA	S/BOLSA	N/CATALINA	1,060	37	39,220	24	\$100,011	Cold Mill & Fill (2" AC)
Total				2,230		67,150		\$171,233	

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2015-2016	MARINA	E/PCH	6TH	629	61	38,369	20	\$97,841	Cold Mill & Fill (2" AC)
2015-2016	SILVER SHOALS	S/BOLSA	N/CATALINA	1,060	37	39,220	27	\$100,011	Cold Mill & Fill (2" AC)
Total				1,060		39,220		\$100,011	

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2016-2017	IRIS	HAZELNUT AVE	IRONWOOD AVE	226	32	7,232	68	\$18,442	Cold Mill & Fill (2" AC)
2016-2017	SILVER SHOALS	S/BOLSA	N/FATHOM	300	33	9,900	22	\$25,245	Cold Mill & Fill (2" AC)
2016-2017	HARBOR	S/BAYSIDE	N/BAYOU	760	33	25,080	20	\$63,954	Cold Mill & Fill (2" AC)
2016-2017	VIOLET	S/ELDER	N/FIR	160	33	5,280	45	\$13,464	Cold Mill & Fill (2" AC)
Total				1,446		47,492		\$121,105	

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2017-2018	16TH	S/ELECTRIC	N/PCH	1,160	21	24,360	35	\$62,118	Cold Mill and Fill (2" AC)
2017-2018	17TH	S/ELECTRIC	N/PCH	1,260	21	26,460	60	\$67,473	Cold Mill and Fill (2" AC)
2017-2018	ANDERSON	W/S PCH	END CDS	255	38	9,690	57	\$24,710	Cold Mill and Fill (2" AC)
Total				2,675		60,510		\$154,301	

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2018-2019	IRIS	HAZELNUT AVE	IRONWOOD AVE	226	32	7,232	88	\$18,442	Cold Mill and Fill (2" AC)
2018-2019	IRONWOOD	W/ROSE	W/IRIS	1,420	33	46,860	41	\$119,493	Cold Mill and Fill (2" AC)
2018-2019	SUNFLOWER	S/FIR	N/IRONWOOD	560	37	20,720	43	\$52,836	Cold Mill and Fill (2" AC)
Total				2,206		74,812		\$190,771	

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2019-2020	HAZELNUT	E/WISTERIA	W/SUNFLOWER	1,310	33	43,230	44	\$110,237	Cold Mill and Fill (2" AC)
2019-2020	VIOLET	S/ELDER	N/FIR	160	33	5,280	48	\$13,464	Cold Mill and Fill (2" AC)
2019-2020	OLEANDER	S/ALMOND	N/FIR	1,320	36	47,520	56	\$121,176	Cold Mill and Fill (2" AC)
Total				2,790		96,030		\$244,877	



City of Seal Beach  
2014 PMS Update  
Local Street Resurfacing Program

2/25/2014

Plan Year	Street Name	From	To	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	PCI before Treatment	Treatment Cost	Treatment
2020-2021	PRINCTON	E/END	W/HARVARD	230	30	6,900	63	\$17,595	Cold Mill and Fill (2" AC)
2020-2021	COLLEGE PARK	E/HARVARD	CITY LIMIT	940	44	41,360	64	\$105,468	Cold Mill and Fill (2" AC)
2020-2021	DARTMOUTH	E/END	W/HARVARD	180	34	6,120	77	\$15,606	Cold Mill and Fill (2" AC)
Total				1,350		54,380		\$138,669	
Grand Total				13,757		439,594		\$ 1,120,965	



City of Seal Beach  
2014 PMS Update  
Local Street Slurry Program

3/21/2014

Plan Year*	Street Name	From	To	Length (ft)	Width (ft)	Area (sf)	FC*	PCI Date	PCI before	Treatment Cost	Treatment
2014	CAMELIA	S/ALMOND	N/BANYAN	590	33	19,470	E	10/21/2013	88	\$7,100	Slurry Seal
2014	HAZELNUT	E/HEATHER	W/ROSE	1,610	33	53,130	E	10/18/2013	80	\$157,522	Slurry Seal
2015	ALMOND	E/OLEANDER	W/ASTER	4,390	36	158,040	C	10/21/2013	91	\$54,886	Slurry Seal
2015	BLUE BELL	S/ALMOND	N/BIRCHWOOD	710	33	23,430	E	10/21/2013	74	\$8,544	Slurry Seal
2015	CANDLEBERRY	E/WISTERIA	W/OLEANDER	1,660	33	54,780	E	10/18/2013	96	\$19,976	Slurry Seal
2015	CARNATION	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	87	\$2,636	Slurry Seal
2016	DAFFODIL	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	87	\$2,636	Slurry Seal
2016	DAISY	S/ALMOND	N/BIRCHWOOD	410	33	13,530	C	10/21/2013	87	\$4,934	Slurry Seal
2016	DAISY CIRCLE	S/FIR	N/END	230	33	7,590	E	10/18/2013	73	\$2,636	Slurry Seal
2016	DOGWOOD	E/DAISY	W/IRONWOOD	1,470	33	48,510	E	10/17/2013	89	\$17,689	Slurry Seal
2016	DOGWOOD	E/MARIGOLD	W/FUCHSIA	1,520	33	50,160	E	10/17/2013	88	\$18,291	Slurry Seal
2016	ELDER	E/VIOLET	W/PRIMROSE	1,380	33	45,540	E	10/18/2013	90	\$16,606	Slurry Seal
2016	FERN	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	94	\$2,636	Slurry Seal
2016	IRIS	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	88	\$2,636	Slurry Seal
2016	MARIGOLD	S/CANDLEBERRY	N/DOGWOOD	160	33	5,280	E	10/17/2013	85	\$1,925	Slurry Seal
2016	OLEANDER	S/ALMOND	N/FIR	1,320	36	47,520	E	10/18/2013	56	\$17,328	Slurry Seal
2016	PRIMROSE	S/DOGWOOD	N/ELDER	210	33	6,930	E	10/18/2013	96	\$2,527	Slurry Seal
2017	CLIPPER	E/ CARAVEL	W/ ELECTRIC	910	33	30,030	E	10/28/2013	97	\$11,498	Slurry Seal
2017	COLLEGE PARK	E/HARVARD	W/HARVARD	2,590	37	95,830	C	10/16/2013	94	\$33,281	Slurry Seal
2017	COLLEGE PARK	E/HARVARD	W/CITY LIMIT	940	44	41,360	E	10/16/2013	64	\$14,364	Slurry Seal
2017	DARTMOUTH	E/END	W/HARVARD	180	34	6,120	E	10/16/2013	77	\$2,125	Slurry Seal
2017	DORY	S/GALLEON	N/SCHOONER	360	28	10,080	E	10/28/2013	94	\$3,860	Slurry Seal
2017	ELECTRIC	E/CORSAIR	W/END	380	33	12,540	A	10/15/2013	93	\$4,801	Slurry Seal
2017	GALLEON	S/ELECTRIC	N/DORY	970	33	32,010	E	10/28/2013	78	\$12,256	Slurry Seal
2017	HARVARD	S/COLLEGE PARK	W/END	3,310	37	122,470	C	10/16/2013	94	\$42,533	Slurry Seal
2017	LOYOLA PLAZA	S/COLLEGE PARK	N/END	330	25	8,250	E	10/16/2013	80	\$2,865	Slurry Seal
2017	OCCIDENTAL	E/ STANFORD	W/ HARVARD	160	33	5,280	E	10/16/2013	79	\$1,834	Slurry Seal
2017	PRINCETON	E/END	W/HARVARD	230	30	6,900	E	10/21/2013	63	\$13,987	Slurry Seal
2017	SCHOONER	E/GALLEON	W/DORY	660	33	21,780	E	10/28/2013	91	\$8,339	Slurry Seal
2017	YALE	E/COLLEGE PARK	W/COLLEGE PARK	1,160	33	38,280	E	10/16/2013	86	\$13,294	Slurry Seal
2018	BEACHCOMBER	S/BOLSA	N/SEA BREEZE	1,160	33	38,280	E	10/25/2013	99	\$15,312	Slurry Seal
2018	BERYL COVE	S/ EMERALD COVE	N/ MARLIN	360	33	11,880	E	10/25/2013	91	\$4,895	Slurry Seal



**City of Seal Beach  
2014 PMS Update  
Local Street Slurry Program**

3/21/2014

Plan Year*	Street Name	From	To	Length (ft)	Width (ft)	Area (sf)	FC*	PCI Date	PCI before	Treatment Cost	Treatment
2018	COASTLINE	E/CARMEL	W/BALBOA	2,380	33	78,540	E	10/25/2013	91	\$31,416	Slurry Seal
2018	DRIFTWOOD	E/BALBOA	W/COASTLINE	1,460	33	48,180	E	10/28/2013	98	\$19,272	Slurry Seal
2018	EMERALD COVE	E/ BERYL COVE	W/ JADE COVE	580	33	19,140	E	10/25/2013	91	\$7,886	Slurry Seal
2018	JADE COVE	S/ EMERALD COVE	N/ MARLIN	360	33	11,880	E	10/25/2013	89	\$4,895	Slurry Seal
2019	10TH	S/OCEAN	N/ELECTRIC	950	40	38,000	E	10/30/2013	97	\$15,200	Slurry Seal
2019	13TH	S/ OCEAN	N/ ELECTRIC	710	40	28,400	E	10/30/2013	95	\$11,360	Slurry Seal
2019	DOLPHIN	N/ OCEAN	N/ ELECTRIC	582	24	13,968	E	10/30/2013	90	\$5,587	Slurry Seal
2019	MAIN	S/OCEAN AVE	N/ELECTRIC	1,190	57	67,830	C	10/30/2013	87	\$27,132	Slurry Seal
2020	ALMOND	E/OLEANDER	W/ASTER	4,390	36	158,040	C	10/21/2013	89	\$63,217	Slurry Seal
2020	CARNATION	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	85	\$3,036	Slurry Seal
2020	DAFFODIL	S/ALMOND	N/END	230	33	7,590	E	10/21/2013	85	\$3,036	Slurry Seal
2021	FIR	E/GOLDENROD	W/IRONWOOD	1,460	33	48,180	E	10/17/2013	95	\$19,850	Slurry Seal
2021	FUCHSIA CIRCLE	S/FIR	N/END	330	33	10,890	E	10/17/2013	95	\$4,487	Slurry Seal
2021	HAZELNUT	E/HEATHER	W/ROSE	1,610	33	53,130	E	10/18/2013	78	\$21,252	Slurry Seal
2021	HEATHER	S/HAZELNUT	N/LAMPSON	490	37	18,130	C	10/17/2013	95	\$7,252	Slurry Seal
						1,654,848				\$770,631	

**Note:**

1. "Plan Year" is the fiscal year planning for the treatment
  - 2014- FY 2014-2015 CPE Phase III
  - 2015- FY 2015-2016 CPE Phase IV
  - 2016- FY 2016-2017 CPW/Bridgeport
  - 2017- FY 2017-2018 Hill/Cove
  - 2018- FY 2018-2019 Old Town
  - 2019- FY 2019-2020 CPE Phase I
  - 2020- FY 2020-2021 CPE Phase II

2. "FC" is Functional Class
  - A - Arterial
  - C - Collector
  - E - Residential



## Appendix G

# Alternative Funding Levels

**SCENARIO 2: MAINTAIN PCI**

	VERY GOOD	GOOD	FAIR	POOR	VERY POOR
2014	81%	3%	3%	2%	12%
2015	85%	4%	0%	1%	10%
2016	80%	12%	0%	0%	8%
2017	72%	20%	0%	0%	8%
2018	63%	29%	0%	0%	8%
2019	58%	34%	0%	0%	8%
2020	43%	49%	0%	0%	8%

**SCENARIO 3: EXISTING FUNDING**

	VERY GOOD	GOOD	FAIR	POOR	VERY POOR
2014	75%	3%	3%	7%	12%
2015	74%	6%	2%	7%	12%
2016	61%	19%	2%	6%	12%
2017	53%	29%	2%	5%	11%
2018	44%	38%	1%	5%	12%
2019	37%	45%	1%	5%	12%
2020	15%	57%	11%	5%	12%