



# City of San Leandro

Meeting Date: September 6, 2016

## Presentation

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**File Number:** 16-400

**Agenda Section:** PRESENTATIONS

**Agenda Number:** 3.B.

**TO:** City Council

**FROM:** Chris Zapata  
City Manager

**BY:** Keith Cooke  
Engineering & Transportation Director

**FINANCE REVIEW:** Not Applicable

**TITLE:** Presentation on the City's Pavement Management Program

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### SUMMARY AND RECOMMENDATIONS

This report is provided for information only and no action is required.

### BACKGROUND

Streets are a critical component of our infrastructure and an important factor in the quality of life for our residents and the vitality of our businesses. Good pavement increases the efficiency of transporting goods, improves bicycle safety and makes walking more appealing which all leads to reduced greenhouse gas emissions. Each day, residents are dependent upon safe, reliable local streets and roads. Police, fire and emergency medical services all need safe, reliable roads to react quickly to calls.

Street pavement improvement is one of those "pay now or pay more later" situations. A dollar spent this year will save two to ten dollars in the future. Once the system is in a state of good repair, the need for maintenance will be reduced. Repairs to local roadways are more than just fixing potholes; they include improvements for sidewalks, stormwater control, gutters, curb ramps, traffic signs and medians, all of which make our roads safer.

San Leandro has 4,000,000 square yards of street pavement spread over 175 centerline miles of streets. For tracking purposes the streets are divided into 1,100 road segments with an average length of around 1,000 feet. Each road segment is inspected and rated on a scale of 1 (bad) to 100 (good) every other year; this rating is known as the Pavement Condition Index (PCI).

The City uses a computer program developed by the Metropolitan Transportation Commission (MTC) called Street Saver to manage the maintenance of San Leandro's street system. Street inspection results are entered into this database and over time, staff has collected

enough data points to create a specific lifecycle curve for each road and can run queries in the database to predict the condition of the roads. Street Saver calculates that the cost to repair all roads in the City with PCI below 70 is around \$100M. Street Saver also calculates that on an annual basis, \$7.5M is necessary to maintain our road system in its current state.

FY 16-17 ACTC Street Maintenance funding consists of the following:

Measure B and BB Local Streets and Roads	\$2.5M
Vehicle Registration Fees and Gas Tax	\$1.0M

San Leandro has appropriated the following for street repair in FY16-17:

General Fund (due in part to measure HH)	\$1.0M
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San Leandro has a grant for street repair in FY 16-17:

<u>Grant funding from Measure BB:</u>	<u>\$3.0M</u>
Total for FY 16-17	\$7.5M

In addition to the \$3.0M grant this year, Measure BB grant funding is programmed at \$6.0M for FY 17-18 and \$7.0M for each of the three years following that for a total of \$30M over five years (FY 16-17 through FY 20-21). Assuming that all other funding sources keep up with inflation, this grant will allow the City to reduce its street maintenance backlog by around \$15M. Without the Measure BB grant, the funding listed above is would not be sufficient to prevent the street maintenance backlog from increasing.

Street repair is accomplished via four ways:

1. For streets in relatively good condition, with a PCI of 70 and above, the street's life can be extended by applying a slurry seal. Slurry seal is a 1/8" thick mixture of oil and sand and is the lowest cost treatment method at around \$3.50/square yard.
2. Streets in fair condition, with a PCI above 50, can be repaired with a cape seal. Cape seal is a mixture of recycled rubber, oil, and rock chips, with a top layer of oil and sand. Cape seals are about 1/2" thick and the cost ranges from \$8 to \$46/square yard, depending on the amount of pothole repair necessary.
3. Streets in poor condition, with a PCI of 25 and above, can be repaired by milling or grinding off the top layer of pavement and installing 3 to 4 inches of new pavement. A "mill and fill", or overlay project, such as this costs \$65/square yard.
4. Streets that have reached the end of their useful life must be replaced. Typically cement is mixed into the soils below the road after which a new pavement section is installed. Thickness of the pavement varies with the volume of car and truck traffic from 4 to 8 inches. This kind of reconstruction or rehabilitation is \$75 to \$90/square yard depending on the thickness of pavement required.

The Street Saver program is used to calculate the most beneficial use of the City's maintenance funds. In general, it is most economical to repair streets at the low end of each repair category to prevent as many streets as possible from slipping into the next, more expensive, repair category. The exact distribution of funds among the four repair types of work depends on the total funds available, the number of streets that are approaching the cut off for each repair type, and the shape of the lifecycle curve for each street.

While Street Saver is useful for calculating how maintenance money should be spent, it isn't robust enough to accurately choose the street segments that should be repaired. Staff must

walk the candidate streets to confirm the pavement condition is suitable for the proposed maintenance treatment, calculate the cost of preparatory work such as pothole repair and crack sealing, check for utility conflicts or scheduled maintenance, and determine what curb repair and curb ramps are required. In the case of slurry and cape seal streets, some of the crack sealing and preparatory work is done by the Public Works Department. Accordingly, the volume of work that Public Works staff can accomplish is considered when selecting street segments for each year's street repair program.

Each summer, staff prepares two road repair contracts; one for slurry and cape seal and a second for overlay and reconstruction. The slurry and cape seal contract concentrates work in one quadrant of the City each year. This makes both the preparatory work done by Public Works and the construction work done by an outside contractor more efficient and prevents neighborhoods from being disrupted by construction every year. The overlay and reconstruction project is done citywide each year. Using the process described above allows the development of an efficient program that maximizes the improvement in our streets pavement conditions.

### **Current Agency Policies**

Council Goal D: Maintain and enhance San Leandro's Infrastructure.

### **Committee Review and Actions**

The Facilities and Transportation Committee requested presentation of this information to the Council.

### **Applicable General Plan Policies**

Policy 52.07: Ensure that sufficient funding is provided for the ongoing maintenance of City-owned facilities, including streets, street lights, traffic signals, landscaping, street trees, storm drains, public buildings, and other infrastructure.

### **Attachment to Staff Report**

- Presentation Materials

**PREPARED BY:** Nick Thom, PE, City Engineer, Engineering and Transportation Department.

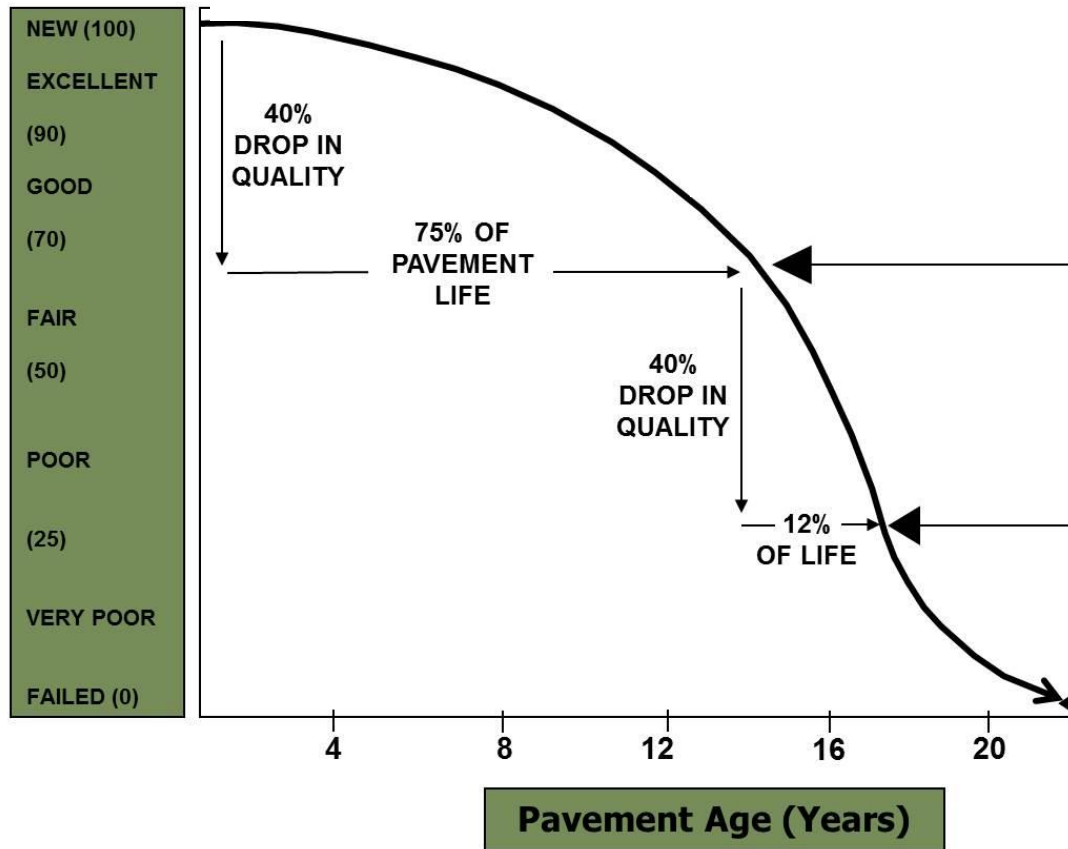
# **STREET PAVEMENT**

**CITY COUNCIL MEETING  
SEPTEMBER 6, 2016**

**CITY COUNCIL GOAL:  
MAINTAIN AND ENHANCE SAN LEANDRO'S INFRASTRUCTURE**

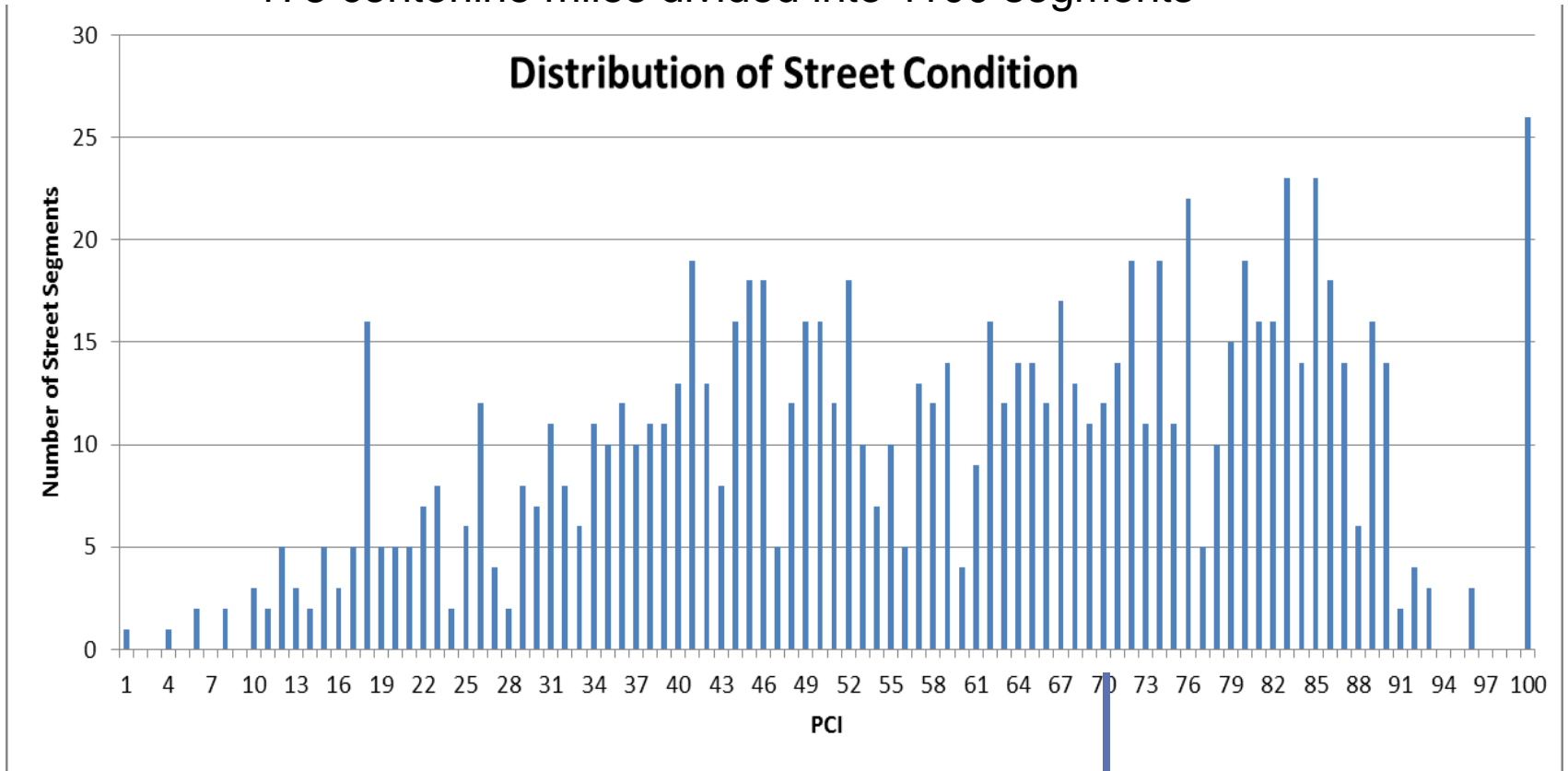
# PAVEMENT LIFECYCLE GRAPH

PAVEMENT CONDITION  
(Approx. PCI)



# CITY STREET SYSTEM

175 centerline miles divided into 1100 segments



← ~\$100M to repair all these segments

# STREET MAINTENANCE FUNDING

Budgeted  Anticipated

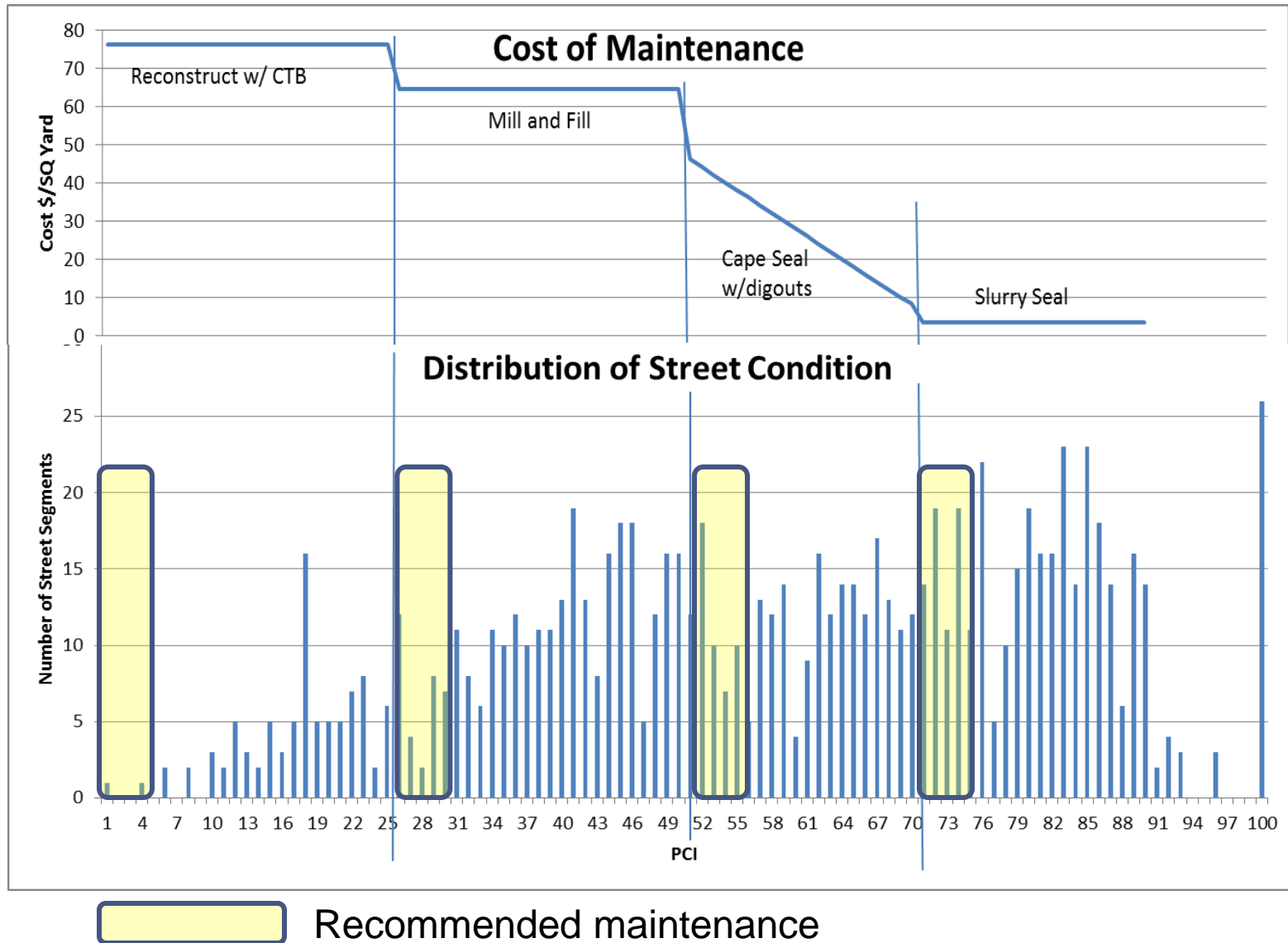
	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY21-22
General Fund HH	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
Measure B and BB LSR	\$2.5	\$2.5	\$2.5	\$2.5	\$2.5	\$2.5
VRF and Gas Tax	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
Grant (BB)	\$3.0	\$6.0	\$7.0	\$7.0	\$7.0	
Total	\$7.5	\$10.5	\$11.5	\$11.5	\$11.5	\$4.5

**\$7.5M/year to maintain status quo (not including required ADA upgrades)**

**Annual expenditures above \$7.5M reduce the maintenance backlog**

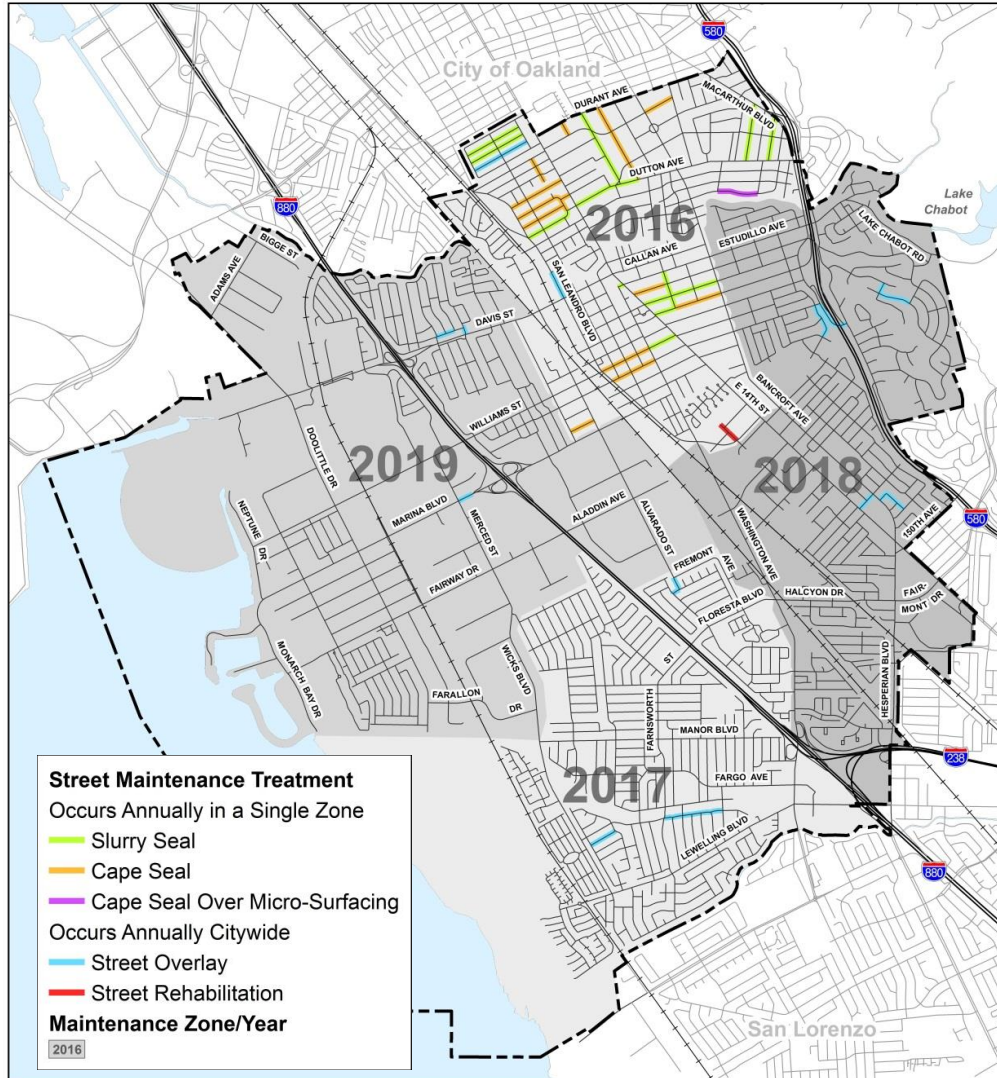
**Annual expenditures below \$7.5M increase the maintenance backlog**

# MAINTENANCE





# Annual Street Maintenance Projects 2015-2016 Construction Year



STREET NAME	BEGIN	END	TREATMENT
148 <sup>th</sup> Ave.	E. 14th St.	Bancroft Avenue	Overlay
Alvarado St.	Fremont Ave.	Portola Drive	Overlay
Begier Ave.	E. 14th St.	Woodland Ave.	Cape Seal
Best Ave.	San Leandro Bl.	Lafayette Ave. (east int.)	Slurry Seal
Beverly Ave.	Dutton Ave.	Durant Ave.	Cape Seal
Bowling Green St.	Dorchester Ave.	Pontiac St.	Slurry Seal
Breed Ave.	Durant Ave.	Dowling Bl.	Slurry Seal
Broadmoor Bl.	Bancroft Ave.	Kenilworth Ave.	Cape Seal
Burkhart Ave.	Farnsworth St.	Norton Street	Overlay
Castro St.	Hays St.	Washington Ave.	Cape Seal
Castro St.	San Leandro Bl.	Hays St.	Cape Seal
Cherrywood Ave.	Lafayette Ave.	E. 14th St.	Cape Seal
Cherrywood Ave.	Park St.	Lafayette Ave.	Cape Seal
Coral Ave.	Bancroft Ave.	Tower Street	Overlay
Diehl Ave.	Dutton Ave.	MacArthur Bl.	Slurry Seal
Dolores Ave.	50' east of Santa Rosa St.	Bancroft Ave.	Cape Seal
Dolores Ave.	E. 14th St.	50' east of Santa Rosa St.	Slurry Seal
Douglas Dr.	Virginia St.	Davis Street	Overlay
Dutton Ave.	130' east of E. 14th St.	Woodland Ave.	Slurry Seal
Edgehill Rd.	Scenic View Dr.	Marine View Drive	Overlay
Estabrook St.	Alvarado St.	Orchard Ave.	Cape Seal
Evergreen Ave.	Sybil Ave.	Fulton Ave.	Overlay
Glen Dr.	Cheffand Rd.	Superior Ave.	Cape/Microsurface
Grand Ave.	Sybil Ave.	I-580 Overpass	Overlay
Joaquin Ave.	Santa Rosa St.	E. 14th St.	Cape Seal
Juana Ave.	Bancroft Ave.	E. 14th St.	Slurry Seal
Lafayette Ave.	Cherrywood Ave.	Best Ave. (north int.)	Cape Seal
Lafayette Ave.	W. Broadmoor Bl.	(end south of) BelView Dr.	Cape Seal
Lawnside Ave.	Laverne Dr.	Elvina Drive	Overlay
Leo Ave	Park St.	Lafayette Ave.	Cape Seal
Lewis Ave.	Dutton Ave.	MacArthur Bl.	Slurry Seal
Lexington Ave.	Dorchester Ave.	Pontiac Street	Overlay
Marina Bl.	Merced Ave.	I-880 on ramp	Overlay
Marineview Dr.	Edgehill Rd.	Skyview Drive	Overlay
Portola Dr.	Monterey St.	Alvarado Street	Overlay
Rose Dr.	San Leandro Bl.	135th / end	Reconstruct
San Leandro Bl.	San Leandro Creek	Davis Street	Overlay
Santa Rosa St.	Estudillo Ave.	Joaquin Ave.	Slurry Seal
Santa Rosa St.	Joaquin Ave.	Dolores Ave.	Slurry Seal
Stokes Ave.	E. 14th St.	Park St.	Cape Seal
Stratford Ave.	Broadmoor Bl.	Durant Ave.	Cape Seal
Suffolk St.	Dorchester Ave.	Pontiac St.	Slurry Seal
Towers St.	Coral Ave.	Halsey Avenue	Overlay
Virginia St.	Frederick Rd.	Arthur Avenue	Overlay
W. Estudillo Ave.	E. 14th St.	Washington Ave.	Slurry Seal
Williams St.	San Leandro Bl.	Washington Ave.	Cape Seal
Williams St.	Washington Ave.	E. 14th St.	Slurry Seal

# QUESTIONS?

