

DATE ISSUED: April 23, 2001

REPORT NO. 01-078

ATTENTION: Public Safety & Neighborhood Services Committee
Agenda of April 25, 2001

SUBJECT: Street and Sidewalk Maintenance Programs

SUMMARY

THIS IS AN INFORMATION ITEM ONLY. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

The Public Safety & Neighborhood Services Committee requested Street Division present an overview of the City's streets and sidewalks maintenance programs. The presentation will focus on the following areas:

1. Current Condition of City Streets
2. Selection Criteria for Street Maintenance
3. Utility Conflict Coordination
4. Types of Street Maintenance Activities
5. Sidewalk Repair Program
6. Current Condition of City Sidewalk
7. Current Funding Levels
8. Future Projection of Streets and Sidewalks

DISCUSSION

1. Current Condition of City Streets

The City of San Diego's current street network consists of approximately 3,400 miles of streets. This includes: 3088 miles of asphalt streets; 113 miles of concrete streets and; 199 miles of unimproved streets. In addition, there are approximately 175 miles of concrete alleys; 24 miles of asphalt alleys; and 34 miles of unimproved alleys.

The ideal roadway maintenance program used by the California Department of Transportation and other major cities is to keep 75% of the roadway system in acceptable condition at all times. Street Division rates and monitors the condition of streets using an Overall Condition Index (OCI) indicator. Streets within the City of San Diego with an OCI rating of 70 or greater are considered in acceptable condition. The OCI rating is based on a scale from 0 to 100 using many road attribute condition factors. These factors include: Type of street, average daily trips, types and size of cracks, number of potholes, previous maintenance, and quality of ride.

Street Division recently retained Stantec Consulting, Inc. to perform a citywide condition assessment of our city streets. The methodology used by the consultant was to assess the condition of all non residential streets and residential streets with an average daily traffic (ADT) count greater than 2,500.

Streets are placed in one of three categories: acceptable, fair or poor. Currently, approximately 49% of the streets are in acceptable condition. A street in the acceptable condition category has little or no cracking, or potholes, or other distresses, has excellent driveability, and does not need maintenance at this time. Currently, approximately 42% of the streets are in fair condition. A street in the fair condition category has moderate cracking, some minor potholes, has adequate driveability, and is typically in need of remedial repairs and a slurry seal, or a minor asphalt overlay. Currently, approximately 9% of the streets are in poor condition. A street in the poor condition category has severe cracking, numerous areas of failed pavement with possible sub base failure, poor drainage characteristics, exhibits a rough ride and qualifies for a comprehensive asphalt resurfacing or a total reconstruction.

This equates to a backlog of streets that need to be resurfaced at 570 miles, and streets that need to be slurry sealed at 785 miles. Based on historical analysis for the last five years, the city has averaged 36 miles of streets resurfaced and 104 miles of streets slurry sealed annually.

2. Selection Criteria for Street Maintenance

Streets are selected for resurfacing or slurry sealing through a variety of methods. The primary criteria used is our Pavement Management System. This system stores current and historical condition data. This data includes the frequency of various pavement distresses such as potholes and cracking, as well as the condition of the ride. The Pavement Management System predicts the future condition of streets with different types of maintenance practices. The software then determines the best method to maintain each section of street and looks at the entire city street system to find the most cost effective maintenance plan given specific budget constraints.

Engineering studies have been performed on the life cycle of asphalt streets. The following chart is a typical street deterioration curve from our Pavement Management System. This deterioration curve illustrates that in the first 75%, or 16 years of a street's life, the serviceability is only reduced by 40%. During the next 25%, or approximately 5 years of life typically a street will lose its final 60% of the serviceability.

What this shows is the most cost effective way to extend a street's service life is to perform maintenance before it reaches the critical deterioration drop-off point, as referred to on the chart as the "\$1.00 FOR RENOVATION HERE."

In addition to the Pavement Management System, input from Street Division staff, other city staff, citizens, community groups and council offices all contribute to identifying streets in need of repair. The recommended sites are then driven and evaluated in the

field to determine the existing condition of the street surface. Combined with the supporting historical maintenance records and traffic usage of the street, the appropriate final repair recommendation is then made.

3. Utility Conflict Coordination

To minimize conflicts with our street maintenance program and other construction projects citywide, Street Division coordinates all maintenance projects with both city and private utilities. The Engineering and Capital Projects Department conducts monthly utility coordination meetings. These meetings are attended by Street Division, Metropolitan Wastewater Department, Water Department, San Diego Gas and Electric, Pacific Bell and other private utilities companies. During these meetings participants exchange information pertaining to their projects to coordinate their work to minimize conflicts in scheduling, redundant construction activities, and trenching after recent street maintenance. Street locations in conflict are put on hold and checked regularly until cleared for maintenance. Every effort is made to prevent the street from being impacted after resurfacing or slurry sealing. However, given the high volume of construction projects, the need to implement emergency projects and the growing telecommunication industry, occasionally streets are “trenched”.

The Planning and Development Review Department is working with other City departments and the private sector to institute new procedures for issuing construction permits. These procedures will include tracking the history of street maintenance for any given street segment and enforce a three year prohibition against any trenching on newly resurfaced streets. If the street must be trenched within the three year period, a monetary assessment may be imposed on the project.

4. Types of Street Maintenance Activities

Asphalt Resurfacing:

Asphalt Resurfacing is the placement of a new layer of asphalt at a thickness of 1-3 inches over an old worn out street surface. Resurfacing also includes the repair of isolated base failures, and grinding at the gutter line to retain drainage characteristics. Small repairs as well as pothole patching are handled by city forces. The major resurfacing segment of the program is handled contractually.

For the second year in a row the Street Division is using asphalt material specifications that exceed city standards in order to ensure for a stronger, more durable material. In the past, the general rule of thumb was to resurface a street at the 21st year of it's life. With today's sophisticated methods of pavement analysis, the frequency of performing an asphalt overlay varies.

Slurry Sealing:

Slurry Sealing is a seal coat which consists of sand, emulsion, and water applied in a thin layer up to a 1/4 of an inch thick across the street surface. Slurry seal coating is used to preserve the condition of sound asphalt pavements. As part of this process, crack sealing,

and occasional surface repairs are needed prior to sealing.

Over the last three to four years, the Street Division has partnered with the City of Los Angeles in the development and implementation of a newer slurry seal coating product. This new slurry uses rubber from recycled tires, has a permanent, darker finish, and is a more resilient coating product. This material remains flexible over a longer period of time. Since using this newer product, the Street Division has received positive feedback from our customers. Other agencies such as Cal-Trans, County of San Diego, City of La Mesa, City of Chula Vista and others have requested specification information for this product for use in their street maintenance program.

Concrete Street Program:

There are approximately 113 miles of concrete streets in San Diego. Most are in need of repair or complete reconstruction. When appropriate, failed sections of a concrete street are removed and replaced with concrete, or in some instances asphalt. Although this repair addresses the immediate problem of a failed section of a concrete street, the repair is not pleasing in appearance.

Pothole Repairs:

Last year the Street Division patched over 42,000 potholes. Requests for pothole patching come into the Street Division via the Internet from the City's web site, the pothole telephone hotline, Council offices, and from City Staff. The established goal of the Street Division is to patch 90% of all potholes within 48 hours of the request (exceptions are inclement weather conditions). Last year, the Division met this goal.

5. Sidewalk Repair Program

The City has an estimated 4,226 miles of concrete sidewalks. Some areas have sidewalks that were constructed in 1910.

The City's policy with regard to the maintenance of concrete sidewalks is outlined in Council Policy 200-12, SIDEWALK MAINTENANCE POLICY. The city's policy is based on the California Streets and Highways Code, Section 5610. This section places the responsibility for maintenance of the concrete sidewalks totally on the abutting property owner with a few exceptions.

Concrete sidewalks are replaced at city expense only under the following conditions:

- Damage caused by parkway trees
- Damage due to grade subsidence
- Damage due to city utility cuts
- Sidewalk fronting city owned property
- Sidewalk at intersections (no abutting property)
- Damage due to heat expansion

All unsafe sidewalk conditions which come to the attention of Street Division are patched

with asphalt to eliminate tripping hazards and assist in protecting the city from liability.

As an incentive to encourage property owners to replace their old deteriorated sidewalks, the City offers a cost sharing program known as the “50/50 Program”. If all qualifications are met, the cost for such repairs are divided equally between the property owner and the City. With the recent overwhelming response from property owners requesting information and/or participation in the program, a backlog of customers has been created. There are currently over 450 requests, waiting to be evaluated for possible participation in the cost sharing program. The Street Division has received signed contracts from 84 customers, who are now waiting for construction to begin. The average waiting period for start of construction, from the time the signed contract with remittance is received by the Street Division is 180 days. In an effort to accelerate the processing of requests and complete the construction of these sidewalk projects, Street Division will place these projects on a contract. This bundling of locations through a contract will bring the current waiting period to acceptable levels. In the past, all cost sharing projects were accomplished by city forces. After the completion of the above contract, the waiting period will be approximately 60 days.

6. Current Sidewalk Condition

The current backlog for general sidewalk repairs is approximately \$5,300,000, includes 850 locations and is estimated to take 4 years to address. This includes associated repairs related to sidewalks such as curb, gutter and driveway aprons. This list was generated by citizens and city staff reporting the poor condition of the sidewalks and were determined to be the City’s responsibility.

The current backlog for sidewalk repairs due to tree related damage, is approximately \$3,000,000, includes 3,000 locations and is estimated to take 4 years to address.

In order to determine the actual backlog of sidewalk repairs and associated costs, a comprehensive condition assessment survey would be required. The cost and time necessary to complete the survey is not known at this time. Other repairs including curbs, gutters and driveways associated with the sidewalk will be necessary at some of these locations. The City has maintenance responsibility for all existing curb and gutter structures.

7. Current Funding Levels

The chart below represents the current funding levels for street and sidewalk maintenance.

Street Maintenance Activity	FY2001 Operating	FY2001 Enhanced	FY2002 Proposed
Asphalt Resurfacing	\$ 3,746,043	\$ 9,922,929	\$ 4,199,083
Slurry Seal	2,600,532	3,103,000	3,211,855
Concrete	0	0	0

Potholes	493,702	0	493,702
Sub Total	6,840,277	13,025,929	7,904,640
Sidewalk Maintenance Activity			
General related repairs	1,358,016	0	1,392,661
Tree related repairs	1,666,801	0	1,778,584
Cost Share "50/50" Program	300,000	0	300,000
Sub Total	3,324,817	0	3,471,245
Total Budget	\$10,165,094	\$13,025,929	\$11,375,885

8. Future Projection of Streets and Sidewalks

In order to comply with American with Disabilities Act, Street Division will include in future resurfacing contracts, the installation of pedestrians ramps at all affected intersections. It costs approximately \$1,500 to install a pedestrian ramp. Up to four pedestrian ramps per intersection may be needed. This will significantly reduce the number of miles resurfaced per year.

In previous years, an average of 36 miles of streets were resurfaced and 104 miles of streets were slurry sealed. Given the current level of funding mentioned above, including anticipated increases in labor and material, we estimate future years will average 24 miles of resurfacing and 119 miles of slurry sealing.

The following funding levels provide two alternatives. The first alternative identifies the minimum level of funding necessary to repair the streets and sidewalks, and prevent the backlog from continuing to grow. The second alternative identifies the minimum level of funding necessary over the next five years to eliminate the backlog of street and sidewalk repairs, and provide the ongoing repairs.

Street Maintenance Activity	Alternative 1 (Annual)	Alternative 2 (next 5 years)
Asphalt Resurfacing	\$21,296,000	\$41,360,000
Slurry Seal	6,939,000	11,178,000
Concrete	1,193,280	7,529,280
Potholes	550,000	1,000,000
Sub Total	29,978,280	61,067,280
Sidewalk Maintenance Activity		
General related repairs	2,800,000	3,860,000
Tree related repairs	1,320,000	1,920,000
Cost Share "50/50" Program	288,000	288,000
Sub Total	4,408,000	6,068,000
Total Budget	\$34,386,280	\$67,135,280

CONCLUSION

The longer street maintenance is deferred, the more costly the repairs will be when maintenance is performed. At current funding levels, the city's street network will experience an accelerated deterioration of approximately 235 miles of streets that fall below the acceptable condition levels each year. To bring our entire street network up to the ideal acceptable levels would require funding for the next five years as shown on the above chart in Alternative 2.

Respectfully submitted, D. Cruz Gonzalez Director, Transportation Department		Approved: George I. Loveland
--	--	------------------------------

LOVELAND/MXS