

Pavement Management

UPDATE

October 10, 2005

What is Pavement Management?

- Pavement Management is a program that is used to improve the efficiency of determining which streets require either slurry seal or overlay before they are about to enter into a costlier repair level.
- It uses a combination of current pavement defects, road classification, and traffic volumes to assign a PCI (Pavement Condition Index) to determine the proper maintenance treatments.

Required to receive Federal transportation funds

Pavement Condition Index (PCI)

- The PCI is a series of numbers that rank the streets based on the severity of the defects.
- Average system PCI is a prognosis of the health of the entire pavement network.
- Based on latest update, City of Culver City has a PCI of 77.

Pavement Management System

- Culver City uses the InfraManager System by CHEC Management Systems, Inc.
 - Installed in 1997/1998
 - Streets rated again in 2001
 - Ratings Completed again in June 2005

STATUS OF THE STREET SYSTEM

- City has 118 Centerline Miles of Road (241 lane miles)
- City has visual condition ratings on the entire system once every four years
- As of June 2005, it would require \$17.9 million to bring Culver City to a PCI level of 100
- Based on today's higher oil and construction market prices, the current costs can not be accurately estimated

Past Projects

- **Jefferson Boulevard and La Cienega**
- **Overland Avenue and Sawtelle Boulevard**
- **Washington Boulevard**
- **Green Valley Circle, Buckingham Parkway, and Canterbury Drive**
- **Carson Street, Helms Avenue**
- **Culver Boulevard**

Available Funding Sources

- California State Gas Tax Funds
- City General Funds
- Federal Transportation Funds
- New Development Impact Fees
- Community Development Block Grant
- Redevelopment Funds
- One-time Developer mitigation funds

Outstanding Requirements

- **Current Major Repairs**
 - Reconstruction – 3 Centerline Miles
 - Overlay – 27 Centerline Miles
- **Surface Treatments**
 - 7.5 Centerline Miles of seals
- **Routine Maintenance**
 - 38 Centerline Miles

There are 75 centerline miles out of 118.5 centerline miles of road that need treatments

Understanding How Pavements Change

- Pavements deteriorate over time due weather, traffic, and repetitive loading from heavier traffic loads
- Cracking, rutting, and fatigue failure due to pavement becoming less flexible from oxidation
- Water entering in cracks and causing base or soil to settle
- Utility cuts in street
- Roots uplifting asphalt

Program expenditures and cost requirements

- Current PCI = 77
- In 1997/98, it required \$9.8 million to bring the street network PCI level to 100
- In 2005/06, it requires \$17.9 million to bring the street network PCI level to 100
- Average \$1.3 Million a year on reconstruction and overlay since 1997/98
- About \$2.2 Million a year is required to maintain the overall network level at PCI of 77.



Slurry Seal

- Has good wearing surface
- 5-7 year life
- Helps seal cracks from water intrusion
- Renews surface quality
- Does not add structural strength
- Costs 4 times less than asphalt overlay



Overlays

- Add structural strength to road
- Restore Ride Quality
- 10 -15 year life
- Rubberized asphalt can extend pavement life to 15 - 20 years



Reconstruction

- Replaces full structural section
- Costs 4 times more than overlay
- Can last 25 years if no trees roots and utility cuts.



Protecting the street system

- The Police Department enforces heavy truck loads on City streets
- Trucks 3 tons or more prohibited on residential and on major city streets without a permit
- Bio barriers installed adjacent to new curb and gutter to prevent tree root uplifting in street
- Motorists discouraged to use local streets as cut through with signage, speed humps, new curbs, NTMP
- Utilities required to restore entire lane
- Potholes rapidly filled.
- Rubberized asphalt used often on arterials

Conclusion

Direct staff to further research and return with options to increase funding for street rehabilitation projects