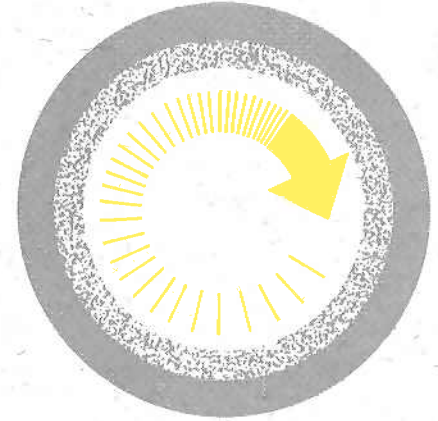


DWP PIPELINE REHABILITATION PROGRAM

Los Angeles
Department of
Water and Power



IMPROVEMENTS FROM THE INSIDE OUT: THE DWP PIPELINE REHABILITATION PROGRAM

In Los Angeles there are over 7,000 miles of water pipelines. About 1,800 miles of these pipelines were installed before 1940 and have no protection against corrosion and deterioration.

The Los Angeles Department of Water and Power (DWP) began cement lining pipelines in 1944 to improve the water quality. To date, nearly 850 miles have been completed. For the next several years, the DWP plans to line about 130 miles every year at an estimated annual cost of \$28 million.

SELECTING PROJECT SITES

Cement lining is necessary in many parts of the city, from the oldest neighborhoods in central Los Angeles to the outlying communities of the San Fernando Valley. An effort is made to prioritize the areas chosen by using the following criteria:

- Areas with chronic, isolated water quality problems
- Areas where water quality problems are widespread, like in older areas of the city
- Areas that have insufficient water flow to provide adequate fire protection

THE BENEFITS

- ▶ Improved water quality because corrosion deposits are removed
- ▶ Improved fire fighting capabilities because more water can flow through the pipes
- ▶ The life of the pipe is extended by at least 50 years
- ▶ A cost savings of up to three-fourths the cost of replacement
- ▶ Lining is faster and less disruptive than replacement

THE PROCESS IN PICTURES

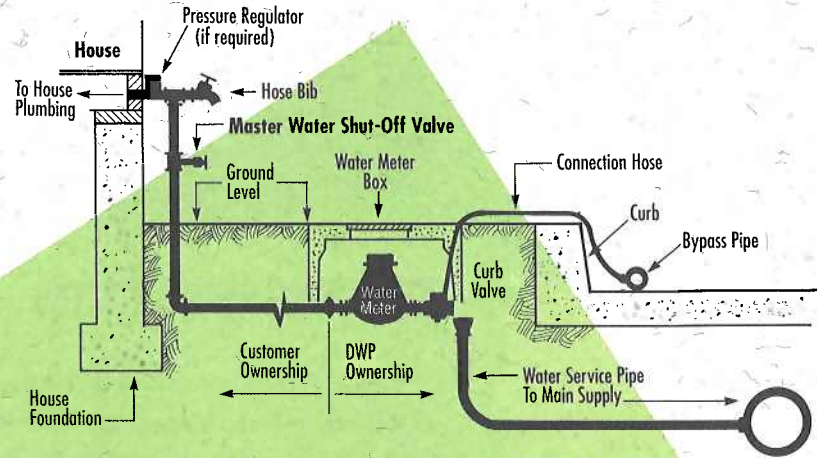
Temporary water lines are installed to provide continuous service while the main water line is being upgraded.



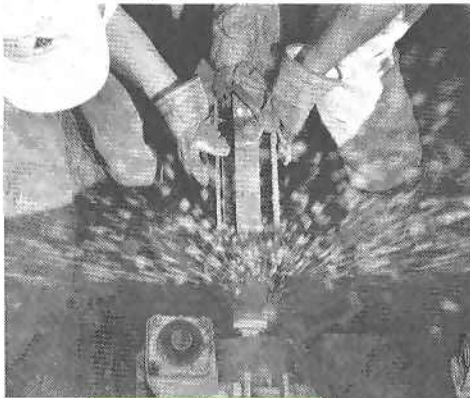
Excavations are made in the street about every 300 feet for access to the pipe, and covered with steel plates when not in use.



A thin layer of cement mortar lining is applied by a small machine that is inserted into the pipeline and pulled through at a constant rate so that the lining is smooth and even.



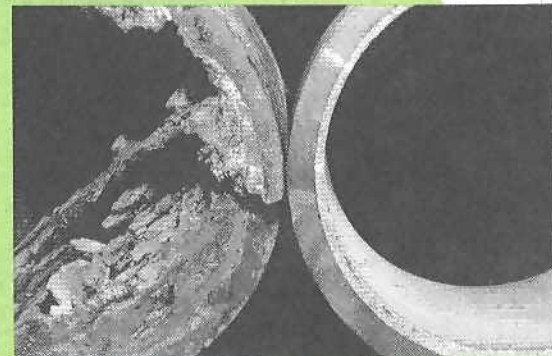
A behind-the-scenes view of your water service during the cement lining process.



Lining machine emerges from pipe spinning off cement mortar.



The DWP project inspector examines the uniformity and smoothness of the cement mortar that has just been applied.



The contrast between an old pipe and a lined pipe emphasizes the water quality benefits.