

Funding to Fix Culverts Falls Short

While Many in Good Condition, Others Need Major, Expensive Rehab

Culverts are a vital part of California's transportation system because they prevent flooding and erosion by channeling streams and storm water beneath roads and highways.

In 2015-16, Caltrans crews inspected 8,938 culverts and found the majority, 68 percent, were in good condition and required no repairs. Another 20 percent needed only corrective maintenance or minor repair. But 10 percent required major rehabilitation, and 2 percent are in such bad shape they can no longer do the job for which they were built.

That categorical breakdown for the last fiscal year is similar to what inspectors have found over the past 10 years, and is likely predictive of what they will find as they continue to systematically catalogue and assess the remaining inventory of culverts. There are an estimated 205,000 culverts in the state highway system. Of the 114,693 culverts assessed to this point, 62 percent are in good condition; 25 percent are rated in fair condition, and 13 percent are in poor condition.

Based on information gathered so far, Caltrans estimates it will cost approximately \$570 million annually over a 10-year period to assure that 90 percent of the culverts are in good or fair condition. That money will need to come from the State Highway Operation and Protection Program (SHOPP), the main funding source for Caltrans' maintenance needs.

The most recent four-year SHOPP allocated about \$60 million a year to repair and replace failing culverts.

Corrective and routine maintenance work is funded by the State Highway Account (SHA), currently at \$5 million per year plus support costs. For 2016-17, the SHA allocation for drainage has been doubled to \$10 million.

Failed culverts can cause traffic delays, require costly repairs and interrupt the transportation system. Culvert failures can also damage the surrounding riparian environment. Debris and sediment from



These culverts are part of the newly constructed Willits Bypass on U.S. Highway 101.

a culvert failure can clog streams and creeks and impede migrating fish.

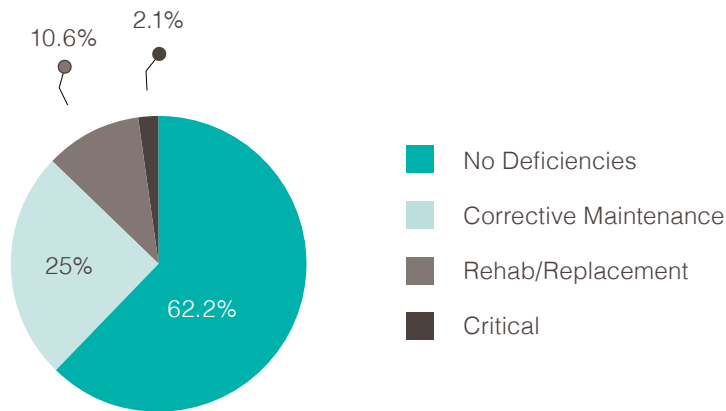
Culverts fail over time for various reasons, such as usage, age and environmental conditions. Some common causes for culvert failures are clogs, pipe damage, washouts, rusted or failed inverts, cracked concrete, exposed or corroded reinforcing steel, joint separation and backfill infiltration. Culvert failures can be a hazard to the traveling public.

Most of Caltrans' 12 districts each have a goal of 1,200 inspections annually (about 23 each week per district). But districts in the most urbanized areas, such as the San Francisco Bay Area, Los Angeles and Orange County, set lower annual inspection goals of 800 per year because of the difficulties of assessing culverts due to traffic volume and limited lane closure options.

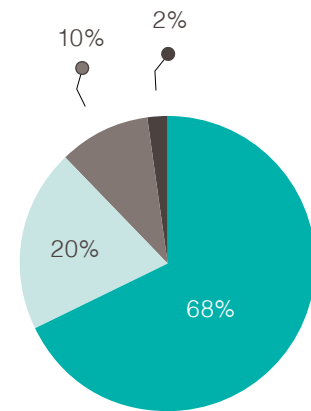
Districts 7 and 8 (Los Angeles and San Bernardino, respectively) met or exceeded their goals for fiscal year 2015/16. Districts 7 and 11 (Los Angeles and San Diego) are adding additional inspection crews to expedite the culvert inventory review.

Of the culverts inspected since fiscal year 2005, about 62 percent are in good working order, about 25 percent are in fair condition needing corrective

Conditions of all Culverts Assessed since 2005



Conditions of Culverts Assessed in 2015-16



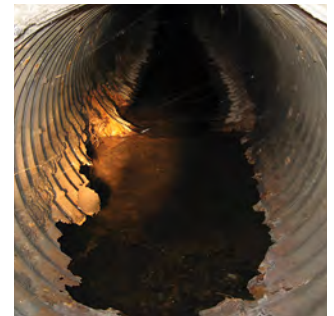
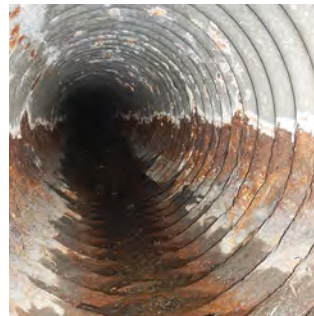
or preventative work, and about 13 percent are in poor condition, requiring either major rehabilitation or replacement.

Of the 8,938 culverts assessed in 2015-16, 68 percent (6,088) had no deficiencies (good category), 20 percent (1,776) are in need of corrective maintenance (fair category), with 10 percent (875) in need

of major rehabilitation and 2 percent (199) rated in critical condition (poor category). **MM**

Source: Division of Maintenance Culvert Inspection Program End of the Year Report FY 2015/16; Parviz Lashai, Chief of Roadside Maintenance

Culvert Inspections Report 2000-2016



No Deficiencies	Corrective Maintenance	Rehab/Replacement	Critical
71,331	28,718	12,197	2,447
62.2%	25.0%	10.6%	2.1%
Length (ft.): 6,824,926	Length (ft.): 2,685,942	Length (ft.): 1,095,988	Length (ft.): 217,005
Like new condition. No maintenance needed.	Culverts in this category fall under Minor Maintenance and HM2-251 Programs. Maintenance activity includes lining of culverts, clearing of debris and filling in of spalls.	Culverts in this category generally fall under SHOPP Programs and Director's Orders. Some culverts in this category are candidates for lining, but most will probably need major rehab or replacement.	Culverts in this condition have failed and are not functioning as designed.