

Bridge Preservation: Bridge Preventive Maintenance Program EXECUTIVE SUMMARY

OVERVIEW: Los Angeles County Department of Public Works leads a federally-funded bridge preservation program on behalf of cities to maximize life of locally-owned bridges.

CHALLENGE: Shrinking budgets and gas tax revenues are the new reality in California. Local agencies face the challenge of maintaining their infrastructure under such conditions. In California, there are approximately 25,000 bridges listed on the National Bridge Inventory (NBI). Approximately 30% of those bridges are classified as either structurally deficient or functionally obsolete. Similarly, in Los Angeles County, approximately 30% of the more than 1,400 locally-owned NBI bridges share the same designations and more than half have exceeded their theoretical 50-year design life. With an aging bridge infrastructure in need of various levels of repair or rehabilitation, it has become vital for local agencies to take a proactive approach to overall management of their bridge inventories by addressing the needs of bridges that are still in good condition rather than solely applying a "worst-first" approach.

INNOVATIVE SOLUTION: To meet the challenge, in 2010 Public Works took the lead to initiate and implement a countywide Bridge Preventive Maintenance Program (BPMP) on behalf of cities. The BPMP aims to maintain existing bridges in a structurally safe and serviceable condition by correcting minor deficiencies early in a bridge's life, rather than waiting until a bridge develops major problems requiring more costly rehabilitation or replacement. When properly applied, preventive maintenance is a sustainable practice that offers a cost-effective way to extend the service life of bridges and makes efficient use of limited funding. Before the BPMP, each City was responsible to maintain their local bridges in a safe and serviceable condition at their own cost. Through the BPMP, Public Works has secured federal funding on behalf of Cities to finance approximately 88.5% of eligible work. By implementing the work on a regional level, cost savings are achieved through economies of scale.

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ORIGINALITY: The BPMP is a unique example of a collaborative effort between local, State, and Federal agencies, and provides a model for other Counties to take a lead role in preserving a multi-agency bridge network in a fiscally and environmentally sustainable manner.

COST EFFECTIVENESS: Los Angeles County's Bridge Preventive Maintenance Program is a \$55 million program that will extend the service life of more than 400 bridges. Plans, specifications, and environmental studies are being prepared for the first 258 bridges in 34 cities, which include sealing over 2 million square feet of bridge deck, replacing 32,000 feet of joint seals, and patching 10,000 square feet of spalled concrete. Work on the first group of 22 bridges was completed in Spring 2016. Preventive maintenance is expected to extend the service life of bridges by 5 to 10 years, depending on the treatment applied and the condition of the bridge. For the 258 bridges currently in progress, the proposed preservation work is estimated to save more than \$150 million by extending the life of the bridges. This equates to an annualized cost avoidance of \$3 million or approximately \$12,000 per bridge, per year.

RESULTS: The BPMP will improve the overall quality of the local street and roadway network within Los Angeles County by extending the service life of multiple bridges in a cost-effective and environmentally sustainable manner. The BPMP preserves and protects the public's investment in local infrastructure and implements sustainable practices that have a positive impact on the environment by delaying the need for more substantial bridge demolition and replacement projects that have a greater environmental footprint. The BPMP provides a model for other Counties to take a lead role in preserving their bridge network.

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