

**Quality and Productivity Commission**  
**30<sup>th</sup> Annual Productivity and Quality Awards Program**  
**"Heritage of Excellence"**

**2016 APPLICATION**

Title of Project (Limited to 50 characters, including spaces, using Arial 12 point font):

**NAME OF PROJECT: BRIDGE PREVENTIVE MAINTENANCE PROGRAM**

**DATE OF IMPLEMENTATION/ADOPTION:** JUNE 9, 2015  
 (Must have been implemented at least one year - on or before July 1, 2015)

**PROJECT STATUS:**  Ongoing  One-time only

**HAS YOUR DEPARTMENT PREVIOUSLY SUBMITTED THIS PROJECT?**  Yes  No

**EXECUTIVE SUMMARY:** Describe the project in 15 lines or less using Arial 12 point font. State clearly and concisely what difference the project has made.

1 Approximately 30% of the locally-owned National Bridge Inventory bridges in  
 2 Los Angeles County are classified as structurally deficient or functionally obsolete.  
 3 More than half have exceeded their 50-year design life. The Department of Public  
 4 Works took the lead to initiate and secure federal funding to implement a Bridge  
 5 Preventive Maintenance Program (BPMP) to maximize, extend, and preserve the useful  
 6 life of more than 400 County and City-owned bridges. When properly applied,  
 7 preventive maintenance is a sustainable practice that offers a cost-effective way to  
 8 extend the service life of bridges and makes efficient use of limited funding. Preserving  
 9 the condition of the bridge network reduces greenhouse gas emissions and energy  
 10 usage. Bridge preservation activities require far less energy and delay the need for  
 11 major bridge demolition and rehabilitation projects that have a much larger carbon  
 12 footprint. The BPMP is a unique example of collaborative efforts between local, State,  
 13 and Federal agencies to preserve a multi-agency bridge network. The BPMP provides a  
 14 model for other counties to take a lead role in achieving fiscal and environmental  
 15 sustainability.

**BENEFITS TO THE COUNTY**

(1) ACTUAL/ESTIMATED ANNUAL COST AVOIDANCE	(2) ACTUAL/ESTIMATED ANNUAL COST SAVINGS	(3) ACTUAL/ESTIMATED ANNUAL REVENUE	(1) + (2) + (3) = TOTAL ANNUAL ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
\$ 3,200,000	\$ 0	\$ 0	\$ 3,200,000	<input type="checkbox"/>

**ANNUAL = 12 MONTHS ONLY**

<b>SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS</b> County of Los Angeles Department of Public Works Design Division 900 S. Fremont Ave., Alhambra CA 91803		<b>TELEPHONE NUMBER</b> (626) 458-7949
<b>PROGRAM MANAGER'S NAME</b> David S. Chan		<b>TELEPHONE NUMBER</b> 626-458-7949  <b>EMAIL</b> dchan@dpw.lacounty.gov
<b>PRODUCTIVITY MANAGER'S NAME AND SIGNATURE</b> <small>(PLEASE CALL (213) 893-0322 IF YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME)</small> Kimberly Y. Lyman <i>Kimberly Y. Lyman</i>	<b>DATE</b> 7/5/16	<b>TELEPHONE NUMBER</b> (626) 458-5975 <b>EMAIL</b> klyman@dpw.lacounty.gov
<b>DEPARTMENT HEAD'S NAME AND SIGNATURE</b> Gail Farber <i>Gail Farber</i>	<b>DATE</b> 7-5-16.	<b>TELEPHONE NUMBER</b> (626) 458-4002

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**1<sup>st</sup> FACT SHEET – LIMITED TO 3 PAGES ONLY:** Describe the **Challenge, Solution, and Benefits** of the project. State clearly and concisely what difference the project has made. Use Arial 12 point font

Within the State of California there are approximately 25,000 bridges listed on the National Bridge Inventory (NBI). Roughly 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 50-year design life. With an aging bridge infrastructure in need of various levels of repairs, rehabilitation, or replacement, 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.

To help preserve, maximize, and extend the useful life of locally-owned NBI bridges within Los Angeles County, the Los Angeles County Department of Public Works (Public Works) took the lead to initiate and secure federal funding to implement a countywide Bridge Preventive Maintenance Program (BPMP). The BPMP aims to maintain the existing inventory of bridges in a structurally safe and serviceable condition by correcting minor structural defects and deficiencies early in a bridge’s life, rather than waiting until a bridge develops major problems that require more costly rehabilitation, reconstruction, 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. Preserving the condition of the bridge network reduces greenhouse gas emissions and energy usage. Bridge preservation activities require far less energy and delay the need for major bridge demolition and rehabilitation projects that have a much larger carbon footprint due to hauling away of demolished portions of the bridge and the delivery of new materials to construct the bridge.

As an agent for the California Department of Transportation (Caltrans), Public Works performs biennial bridge inspection functions for over 1,100 locally-owned NBI bridges in 70 cities and the unincorporated communities of Los Angeles County. In a collaborative effort, Public Works is partnering with cities to secure available federal funding through Caltrans and the Federal Highway Administration (FHWA) to implement preventive maintenance on more than 400 of those bridges. Preventive maintenance treatments include replacing deteriorated expansion joint seals, sealing concrete bridge decks to reduce the amount of water infiltrating into the bridge, applying protective deck overlays, and minor repairs or other measures to slow the rate of deterioration of bridge elements.

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Program planning began in 2010 when authorization to proceed was received from Caltrans. A total of 43 cities have now joined the program, with additional cities expected in the future. Plans, specifications, and environmental studies have been prepared for 258 bridges in those 43 cities, which include sealing over 2 million square feet of bridge deck, replacing 32,000 linear feet of joint seals, and patching 10,000 square feet of spalled concrete. The BPMP currently includes 430 bridges and can be expanded to incorporate other locally-owned NBI bridges as eligible preventive maintenance work is identified through Public Works' biennial inspections. Also, to help minimize program soft costs, multiple bridges have been bundled into contracts based on geographic proximity and type of work.

Implementation of the program began in June 2015 when work for the first group of 22 bridges was awarded to a contractor. The construction for the second group of bridges began in June 2016, with many more groupings to follow.

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 replacement projects that have a greater environmental footprint.

Shrinking budgets and gas tax revenues are the new reality in California. Local agencies face the challenge of maintaining their infrastructure under such conditions. The BPMP implements sustainable practices that offer a cost-effective way to extend the service life of bridges while making efficient use of the limited funding. Prior to the establishment of the BPMP, each agency 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 88.5% of eligible work.

The Bridge Preventive Maintenance Program is a unique example of collaborative efforts between local, State, and Federal agencies to preserve a multi-agency transportation network. The BPMP provides a model for other counties to take a lead role in achieving fiscal and environmental sustainability.

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**LINKAGE TO THE COUNTY STRATEGIC PLAN (DETAIL IS REQUIRED FOR COUNTY DEPARTMENTS):** Use Arial 12 point font

The Bridge Preventive Maintenance Program is aligned with the Leadership value and Goals 2 and 3 of the Countywide Strategic Plan.

Leadership can be defined as engaging and motivating others to collaboratively achieve common goals. Public Works demonstrated such leadership values by initiating and securing federal funding to implement the BPMP on behalf of many cities within the County. Through the collaborative efforts, the useful life of more than 400 county and city-owned bridges will be maximized and extended.

Strategic Initiative 5 of Goal 2 directs the use of environmentally sustainable practices that reduce the consumption of energy, water, and other resources. The BPMP aims to maintain the existing inventory of bridges in a structurally safe and serviceable condition. By preserving the condition of the bridge network, greenhouse gas emissions and energy usage are greatly reduced. Bridge preservation activities require far less energy and delay the need for major bridge demolition and rehabilitation projects that have a much larger carbon footprint due to hauling away of demolished portions of the bridge and the delivery of new materials to construct the bridge.

Goal 3 of the Countywide Strategic Plan directs the provisions of Integrated Service Delivery by maximizing opportunities to leverage resources through integration of services. By working jointly together to implement the BPMP and improve the network of bridges, residents of cities and unincorporated county communities who travel on the bridges will benefit and their quality of life will be improved.

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**COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFITS TO THE COUNTY):** If you are claiming cost benefits, include a calculation on this page. You must include an explanation of the County cost savings, cost avoidance or new revenue that matches the numbers in the box. Remember to keep your supporting documentation. Use Arial 12 point font

**Cost Avoidance:** Costs that are eliminated or not incurred as a result of program outcomes.

**Cost Savings:** A reduction or lessening of expenditures as a result of program outcomes.

**Revenue:** Increases in existing revenue streams or new revenue sources to the County as a result of program outcomes.

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\$ 3,200,000	\$ 0	\$ 0	\$ 3,200,000	<input type="checkbox"/>

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Average cost to design and construct a new bridge = \$500 per square foot

Expected service life of a bridge = 50 years

There is about 3.2 million square feet of bridge deck in the current BPMP bridges

Cost to replace the bridges = \$500 a square foot x 3.2 million square feet = \$1.6 billion

Average annualized cost for the bridges (replacement cost divided by service life years)

\$1.6 billion / 50 years = \$32 million per year of service life

Preventive maintenance is estimated to extend service life by 5 years.

% increase in service life = 5 years / 50 year service life = 10% increase in service life

Over the life of a bridge, a 10% increase in service life approximately equates to a 10% savings in costs.

Estimated annual cost savings / avoidance = 10% x \$32 million per year = \$3.2 million

Estimated annual cost savings / avoidance per bridge:

\$3.2 million / 258 bridges = \$12,400 per bridge, per year.