

California Department of Transportation

Bridge Preventive Maintenance Program (BPMP) Guidelines for Local Agencies

April 2024

Background

On January 11, 2002, Federal Highway Administration (FHWA) memo announced that Highway Bridge Program (HBP) funds may be obligated for Preventive Maintenance (PM) on Federal-aid highway bridges (other than bridges on roads classified as local roads or rural minor collectors) under Section 309 of the National Highway System Designation Act of 1995 (codified as 23 United States Code (U.S.C.) 116(d)). According to 23 U.S.C. 116(d), a PM activity is eligible for federal assistance if the State demonstrates to the satisfaction of the Secretary that the activity is a cost-effective means of extending the useful life of a Federal-aid highway.

In August of 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was passed by Congress and signed into law by the President.

SAFETEA-LU extended reimbursable systematic bridge preventive maintenance activities to include bridges off the Federal-aid system (local streets and rural minor collectors). Effectively, this means all non-toll public highway bridges with spans greater than 20 feet and toll bridges meeting the requirements of 23 U.S.C. 144(l) are eligible to receive HBP funding for preventive maintenance activities.

On July 6, 2012, Moving Ahead for Progress in the 21st Century Act (MAP-21) was passed by Congress and signed into law. MAP-21 continued PM for bridges under 23 U.S.C. 114(a)(1)(B).

On December 4, 2015, Fixing America's Surface Transportation (FAST) Act was passed by Congress and signed into law. FAST Act continued PM for bridges under 23 U.S.C. 144(a)(1)(B).

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law, was signed into law. IIJA continued PM for bridges under 23 U.S.C. 144(a)(1)(B).

These BPMP Guidelines are a specific subsection of the Local Assistance Program Guidelines (LAPG) Chapter 6 that provides additional information for local agencies to utilize in determining how to request HBP funds to keep their bridges in good condition. Refer to LAPG Chapter 6 regarding other HBP procedures and guidelines such as project prioritization, project delivery, acronyms, reimbursement rates, Bridge Investment Credit, etc.

Bridge Preventive Maintenance Program Goals and Overview

The BPMP Goals are to:

1. Maintain the existing inventory of bridges in good or fair condition rating.
2. Correct structural deficiencies in a bridge's life before requiring costly rehabilitation, reconstruction, or replacement.
3. Extend the service life of existing bridges.
4. Make efficient use of limited resources.

Preservation of structural serviceability is a key element of the program. PM treatments include reducing the amount of water infiltrating the bridge, protecting the bridge elements, slowing the rate of deterioration, and repair of scour countermeasures. PM activities should concentrate on treating bridges in fair or good condition and showing no more than minor structural distress. PM

activities should not degrade any structural or geometric safety aspects of the facility. PM techniques and strategies should be easily constructible to minimize traffic disruption and should provide relief from intensive or frequent repair activity.

The local agency must have qualified staff or a consultant contract to implement a BPMP project. Consultant contracting must be in compliance with the LAPM. Minimum qualifications for staff or consultants for implementing a BPMP project are:

1. Be professionally licensed civil engineers in California.
2. Have expertise in bridge PM projects.
3. Have expertise in interpreting information in the Bridge Inspection Report (BIR), including element level inspection information and structural defect information.

Local agencies may partner with other local agencies to implement a BPMP project. In these cases, the name of the local agency implementing (project sponsor) the project must be identified.

Local agencies must develop objective procedures to prioritize their preventive maintenance projects. These procedures must be included in the project files for review in future audits. The highest priority projects should include scour countermeasures (streambed degradation or localized scour) and the repair and restoration of structural elements. Priority should be given to bridges that are not eligible for rehabilitation or replacement under the Highway Bridge Program.

Bridges that are currently programmed for rehabilitation or replacement generally are not eligible for funding under BPMP. Local agencies may still apply for a PM project, but justification must be provided at time of application. The work should be limited to the minimum needed to keep the bridge operable until the rehabilitation or replacement project can be advertised.

Local agencies are required to identify the deficiencies or safety issues prior to initiating a PM project. Local agencies must review their complete bridge inventory to ensure project delivery, management, and fiscal efficiencies are leveraged. For example, if multiple bridges have similar deficiencies and needs, it is advantageous to complete the work for all bridges under one preventive maintenance plan.

There are 2 types of BPMP projects, a BPMP Plan Development and a BPMP Bridge List. Both are discussed in the subsequent sections. LAPG 6-A and 6-D forms are not to be submitted for BPMP Bridge List projects.

BPMP Plan Development

BPMP Plan Development projects provide federal aid to local agencies to evaluate their complete local bridge inventory to assess the needs of each structure. Funding to complete the BPMP Plan Development will be provided only once per local agency. The intent is to fund the initial assessment of their complete local bridge inventory, and then subsequently, the local agency should keep their inventory assessment up to date. These are one-time projects per local agency who have never completed a BPMP project before. BPMP Plan Development projects are limited to the Preliminary Engineering (PE) phase and must be completed within 3 years of authorization. If the Plan Development project is not completed within three years of PE authorization, the local agency must pay back the federal funds expended.

Completed Plan Development projects will result in one or more BPMP Bridge Lists to be reviewed and approved by HBP managers. BPMP Bridge Lists are discussed in the subsequent section. After review and approval by HBP managers for the completion of a Plan Development project, the local agency may apply for a BPMP Bridge List project for HBP project prioritization. Such applications are still subject to the HBP project prioritization process and schedule. The completion of a BPMP Plan Development project does not automatically result in the acceptance of a BPMP Bridge List project.

To begin a BPMP Plan Development project, a local agency must submit a letter of request to the District Local Assistance Engineer (DLAE) to program a such project. This letter must address the number of bridges owned by the local agency, how much funding will be needed for the Plan Development project, and if they have existing bridges programmed under the HBP. Reimbursable work cannot commence until after the local agency has received notice that the work is authorized. The federal reimbursement rate is 100% of the eligible Plan Development cost.

BPMP Bridge List

BPMP Bridge List projects provide federal aid to local agencies to perform preventive maintenance measures on identified bridges. A BPMP Plan Development project with the HBP is not required to be completed prior to application of a BPMP Bridge List project. Local agencies may, and are strongly encouraged to, assess their inventory to determine the preventive maintenance needs with local funds.

BPMP Bridge List projects consist of a list of identified bridges with specific work descriptions and requested costs for each bridge. Federal aid may be provided to each bridge in the PE and CON phases under a BPMP Bridge List project.

Steps and details to implementing a BPMP Bridge List project:

1. Local agency staff must perform a detailed review of their bridge inventory and official BIRs to determine if there are preventive maintenance work recommendations, based on these BPMP Guidelines.
2. Local agency staff must consider and determine how to group the bridges with preventive maintenance needs into distinct BPMP Bridge List project applications. For new BPMP Bridge List applications, each submitted application may only consist of bridges with a similar scope such that the work for all bridges can be administered and completed under 1 contract (PE and CON). Separate applications must be submitted for each list that is to be administered separately by contract.

In cases where there is only 1 bridge to be delivered, a standalone preventive maintenance application may be submitted through the LAPG 6-A application process. These projects should be avoided as they do not leverage the benefits of economies of scale of grouped projects.

3. Local agencies must consider all necessary PM measures for each bridge at the time of developing BPMP Bridge List projects to leverage economical efficiencies. For example, joint seal replacements should be done at the same time as deck methacrylate. It is the expectation that a bridge does not apply for another HBP or BPMP project in the next 10

years upon completion of a preventive maintenance project.

4. Clear accounting and expenditure records must be maintained for each individual bridge when managing a project with multiple bridges. This includes funds used for any phase of work on each bridge in the list.
5. The total cost of a BPMP Bridge List must exceed \$200,000.
6. Cost estimates shown on the applications must be rounded to the nearest thousands. Estimates may be more precise to the nearest dollar only when a final list for final invoicing is submitted or if a bridge expended PE funds but is no longer going to construction.
7. The BPMP Bridge List must be submitted to the DLAE electronically in both PDF and Excel format. Refer to the BPMP Bridge List Template for use of BPMP Bridge List submittals and instructions. The federal reimbursement rate is 80% of the eligible BPMP project cost.

Each BPMP Bridge List must comply with the following:

- a. Each Bridge List must list: the owner, the NBI bridge number, the facility carried and intersected, the NBI bridge condition status, the work description, the date of the official BIR used at the time of the submittal, the requested participating PE, CON and total costs, and the non-participating costs. Refer to the BPMP Bridge List template for further instructions.
 - b. All references to cost must include indirect costs (see Chapter 5 of the LAPM), if applicable. Construction costs must include contingency and construction engineering. Contingency is set at 25% of the construction costs for programming purposes for new BPMP Bridge List applications. Contingency is set at 10% of the construction cost for revised BPMP Bridge Lists that are within 1 year of construction authorization.
 - c. Costs included in the spreadsheet should include a cost escalation factor as approved by the California Transportation Commission (CTC). Please refer to the HBP website for the latest approved escalation factor.
8. Once a BPMP Bridge List project has been accepted into the HBP, additional bridges cannot be added to the same list. Local agencies must exercise due diligence to ensure all bridges are included in each application as necessary at the time of application.
 9. A revised BPMP Bridge List may be submitted throughout the project delivery phase to request a cost and/or schedule change. Revised BPMP Bridge Lists may not exceed more than 1 submittal per calendar year.
 10. All BPMP Bridge List applications must be accompanied by a cover letter on a local agency letterhead acknowledging compliance with these program guidelines. The cover letter must be signed by the local agency who is the project sponsor. Sample cover letters are provided on the HBP website. Caltrans will review the Bridge List applications for eligibility per BPMP Guidelines.
 11. All Federal-aid requirements in the LAPM and LAPG Chapter 6 must be followed. BPMP

projects are not subject to the mandatory field review and type selection reviews outlined in LAPG Chapter 6.

Eligible Preventive Maintenance Activities

Local agencies must justify PM work for each specific bridge. A BPMP Bridge List should have multiple bridges with similar work requirements for inventory management and economic efficiencies. For audit purposes, the records must be maintained by local agencies in compliance with Chapter 5 of the Local Assistance Procedures Manual (LAPM).

Careful evaluation of all deficiencies and work recommendations identified in BIR is required to properly scope an appropriate PM project. The most current BIR for each structure must be attached to all BPMP Bridge List applications. Bridge List applications without BIRs will be returned to the local agency. Revised BPMP Project Lists do not require BIRs attached.

Only official BIRs are accepted; separate local agency or consultant produced inspection reports will not be accepted. Work recommendations documented in the BIR that is not routine maintenance may be eligible for reimbursement under the BPMP. Work recommendations not documented in the BIR may be eligible but must be approved by the HBP, with a recommendation from Structure Local Assistance (SLA). The evaluation must be included as part of the documentation justifying the PM project.

The following are specific work items eligible for HBP reimbursement under the BPMP Guidelines:

1. Expansion joint reconstruction or replacement. Bridge joint elements in condition states 2, 3 or 4, as shown in the BIR, are eligible.
2. Deck Work
 - a. Seal Concrete Deck. Deck cracking defect in condition states 2, 3 or 4, as shown in the BIR, are eligible. Sealing bridge deck is usually done by using methacrylate. If polyester overlay is requested and not stated in the BIR, Structure Local Assistance (SLA) should be contacted for concurrence.
 - b. Concrete deck overlays or similar protective deck overlays. Concrete decks should be field assessed for reinforcing bar cover depths, spalling, delamination, and severe cracking. Deck restoration as required, includes removal of asphalt concrete (AC) and unsound concrete. Full concrete deck replacement is not eligible as a PM activity and may be funded through the general bridge rehabilitation program in Chapter 6 of the LAPG.
 - c. Deck Asphalt Concrete removal. Wearing surfaces in condition state 3 or 4, as shown in the BIR, are eligible. If the BIR indicates significant signs of AC deterioration and includes a work recommendation for replacement, it is recommended that the AC is removed, and a deck sealant or polyester concrete overlay be considered. Placing AC onto bridge decks is not eligible.
 - d. If the deck overlay alters the bridge deck elevation, the participating approach roadway work (adding or removing approach pavement) to tie into the new elevation must be kept to a minimum and must not exceed 50 feet. Any additional roadway work exceeding 50 feet is non-HBP participating and is the fiscal obligation of the local agency. The intent of the BPMP is to correct structural deficiencies, not to correct roadway profiles.
 - e. When deck work alters deck elevations, consideration should be taken to taper the

overlay so as not to alter the bridge rail height.

3. Bridge bearings and supports. Restore or replace the existing bearings to make them functional and repair or rehabilitate bearing supports. Bearings in condition state 3 or 4, as shown in the BIR, are eligible.
4. Steel Components. Repair, restoration, and strengthening of major structural elements such as beams, piers, and end caps. Bridge strengthening is to eliminate the need for posting, mitigate further fatigue damage, increase fatigue life, and/or replace or strengthen main load carrying members.
5. Concrete Components. Repair of significant concrete spalls that have structural impacts on the longevity of the bridge. If the BIR indicates significant concrete spalls and includes a work recommendation for repair, then it is eligible.
6. Timber Components. Replacement, or supplementation of timber structural elements, timber deck runners, timber piles are eligible. Repair, replacement, or supplementation of timber railings are not eligible as it is considered routine maintenance.
7. Movable bridge mechanical/electrical components that relate to the structural and mechanical operation that are damaged or worn out may be repaired or replaced. Moveable bridge eligibility must be reviewed by the SLA.
8. Spot painting of structural steel elements, where the Paint Condition Index (PCI) is greater than 70. If the PCI is less than or equal to 70 (major painting effort), the project will be processed under HBP procedures in Chapter 6 of the LAPG. PM painting cannot be justified for solely aesthetic reasons. A work recommendation for paint must be identified in the BIR to be eligible under BPMP.
9. Existing Scour Countermeasure. Preventive maintenance work of restoring existing Rock Slope Protection (RSP) may be eligible. The construction work must be engineered using current Hydraulic Engineering Circular (HEC-23) methods and must be able to change the NBI 113 code to 4 or greater.
10. Caltrans, on a case-by-case basis, can review other scopes of work not documented in the BIR. Examples may include Alkali-silica-reactive aggregate mitigation, corrosion management systems, and fracture critical element replacement/rehabilitation. These items will be subject to Structures Maintenance and Investigations and/or SLA recommendations and HBP manager approval. Local agencies must contact their DLAE for assistance.
11. First time development of BPMP plans. See BPMP Plan Development section for more details.

Ineligible Activities – Bridge Barriers, Routine Maintenance, Etc.

The intent of the BPMP is not to upgrade substandard bridge rails to Manual for Assessing Safety Hardware (MASH) compliance. The replacement of bridge railings in good or fair condition to upgrade to crash tested standards is not eligible under BPMP.

Routine maintenance is the responsibility of the local agency and is not eligible for HBP or other Federal-aid Highway Program funding. Routine bridge maintenance is defined as regularly scheduled activities to preserve the bridge components in their present or intended condition and generally includes work that is normally done by in-house bridge maintenance crews.

The following are specific work items not eligible for HBP reimbursement under the BPMP Guidelines:

1. Repair, replacement, painting, or new construction of the following:
 - a. Bridge barrier, railing, fence, or sidewalk as it does not extend the service life of the bridge.
 - b. Damaged bridge railing due to collisions
 - c. Transition railing, approach guardrails, end crash cushion systems
 - d. Timber railing
 - e. Metal beam guard rail systems
 - f. Warning signs and object markers
 - g. Modifications to bridge rails needed due to bridge deck work
2. Painting over graffiti, graffiti removal, placement of anti-graffiti coating.
3. Repair or replacement of bridge components due to damage from fires, vehicles, or humans.
4. Work associated with the repair of bridge components, installation of preventive measures, or debris removal due to homeless-related activities.
5. Clearing of brush and vegetation overgrowth.
6. Bearing lubrication.
7. Minor concrete repairs (such as minor concrete spalls that have insignificant structural impacts on the longevity of the bridge or culvert). Generally, epoxy injecting into cracks is not eligible. There may be rare cases where epoxy injecting into substructure cracks in marine environments may be eligible. Generally, crack repair in culverts is not eligible except for culvert roofs that are also the riding surface.
8. Temporary shoring of bridges for load carrying capacity deficiencies.
9. Cleaning and flushing deck drains and cleaning/clearing debris from:
 - a. Deck surfaces.
 - b. Bridge sidewalks and curbs.
 - c. Debris removal from channel waterway
 - d. Bearing seats, pier caps, and other structural elements.
 - e. Deck joints.
10. Removing deck asphalt concrete without other PM deck measures.
11. Correcting roadway approaches at the abutments that have settled or dipped.
12. Correcting roadway embankment erosion due to water run-off from the bridge deck or

roadway.

13. Work on existing or constructing new weirs, dikes, fish ladders, and drop structures are not eligible.
14. New installations of structure approach slabs are not eligible.
15. Installation of new scour countermeasures are not eligible for BPMP. Refer to LAPG Chapter 6 for eligible scope regarding implementation of new scour countermeasures.
16. Development of subsequent BPMP plans after the initial BPMP development project.

Design Standards

Design standards for all local assistance projects are defined in Chapter 11 of the LAPM. Local agencies are required to specify the appropriate design standards in their project files for future audit purposes.

Major Scope Changes During the Performance of PM Activities

Local HBP may participate in major scope changes of PM projects provided the local agency can demonstrate the need and provide adequate justification. Scope changes are subject to HBP manager review and approval. When specific bridges within a BPMP Bridge List project are no longer BPMP eligible, the LPA must contact the DLAE for assistance (DLAEs in turn will work with HBP Managers).

If PM scope changes from BPMP eligible work to HBP eligible work, the BPMP Bridge List must be modified for the specific bridge. The BPMP Bridge List will continue to show the specific bridge in it, with only the PE expenditures up to the point when it was determined that the work was not BPMP eligible. A change to the work description must indicate the bridge is not eligible for further BPMP funding. A new HBP project must be processed under HBP procedures in Chapter 6 of the LAPG.

Contact

For questions regarding this program, please contact your DLAE.