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John Bel Edwards, Governor  
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MEMORANDUM

TO: ALL CONSULTANTS  
 ALL BRIDGE DESIGNERS 

FROM: PAUL FOSSIER, P.E.  
 BRIDGE DESIGN ENGINEER ADMINISTRATOR

SUBJECT: BRIDGE DESIGN TECHNICAL MEMORANDUM NO. 65 (BDTM.65)  
 BRIDGE DESIGN AND EVALUATION MANUAL (BDEM) REVISION NO. 6

DATE: December 14, 2016

The following pages in BDEM have been revised and added. The BDEM posted on Bridge Design Section Website has been updated to include these pages. The revised pages (with changes in red) are also attached for reference.

Page No.	Revision Description
Revision History-i	Revised the page to document revision No. 6
I.Ch4-i & ii	Revised the page to update the Table of Contents
I.Ch4-10a to 10g	New pages for new Section 4.2 "Historic Bridges".
I.Ch4-11	Revised the page to renumber existing Section 4.2 to 4.3. No changes in contents.

A new Section 4.2 - Historic Bridges has been added to Chapter 4 of Part I to provide an overview of the Programmatic Agreement (PA) regarding the management of historic bridges in Louisiana and guidance on the application of PA. The previous Section 4.2 - Interstate Lighting Program and Lighting Permits on State Highways has been renamed to 4.3 with no changes in contents.

Refer to BDTM.50 for implementation policy on revisions to BDEM.

This technical memorandum is posted on the LA DOTD Website under *Inside La DOTD > Divisions - Engineering > Bridge Design > Technical Memoranda - BDTMs.*

Please contact Ms. Zhengzheng "Jenny" Fu (225-379-1321, [zhengzheng.fu@la.gov](mailto:zhengzheng.fu@la.gov)) if you have questions or comments.

PF/zzf

Attachment

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## CHAPTER 4 – HIGHWAY BRIDGE PROGRAM AND LIGHTING PROGRAM

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## 4.2—HISTORIC BRIDGES

The Louisiana Department of Transportation and Development (LADOTD) in cooperation with the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation (ACHP), and the Louisiana State Historic Preservation Officer (LASHPO) have established a Programmatic Agreement (PA) regarding the management of historic bridges in Louisiana. The following publications and other information related to Historic Bridges can be found at the Department’s website for Historic Bridge Inventory ([http://wwwapps.dotd.la.gov/administration/public\\_info/projects/home.aspx?key=48](http://wwwapps.dotd.la.gov/administration/public_info/projects/home.aspx?key=48)).

- The Programmatic Agreement (PA)
- Crossing the Bayou: Louisiana's Historic Bridges
- Historic Context for Louisiana Bridges
- Management Plan for Historic Bridges Statewide
- Management Plan for individual historic bridges

The FHWA determined, and the LASHPO concurred, that there are currently 150 historic bridges in Louisiana. As the bridge inventory ages, there are opportunities outlined in the PA to update the historic bridge inventory to include new eligible structures. The LADOTD owns 75 percent of the state’s historic bridges, while local agencies and others (including cities, parishes, and other state and local agencies) own the remaining 25 percent. Of the 150 historic bridges, 121 are subject to the PA (see Attachment 1 of the PA). Another 29 historic bridges (See Attachment 3 of the PA) are not addressed by the PA, but are instead subject to separate review under Section 106 of the National Historic Preservation Act (“Section 106”).

### 4.2.1—LADOTD Points of Contact

The points of contact with the LADOTD will be as follows:

Bridge Design Section - Bridge Design Engineer Administrator

Bridge Maintenance Section - Bridge Maintenance Engineer Administrator

Environmental Section – Environmental Engineer Administrator

### 4.2.2—LADOTD Structured Training

LADOTD Engineering Staff and Consultant personnel either designing or overseeing the design of projects involving historic bridges are required to complete a training course provided by the Department. This training course will be made available by the department on a two-year cycle. The course provides information on the approaches to preventative maintenance, preservation and rehabilitation of historic bridges and related processes outlined in the PA. This training is mandatory and is required as a minimum personnel requirement for consultant contracts as they relate to historic bridges.

### 4.2.3—Application of the PA

The PA specifies measures intended to identify, avoid, minimize, and/or mitigate effects on historic bridges only and is specifically applicable or not applicable to projects as follows:

1. Applies to historic bridge as identified in Attachment 1 of the PA, which lists bridges and outlines their type, treatment category, and ownership.
2. Applies to historic bridge projects using the State’s apportioned federal funds.
3. Does not apply when projects are proposed for non-historic bridges unless a bridge is later determined eligible for the National Register based on new or additional information (following the procedure outlined in Stipulation V.B. of the PA).

4. Does not apply to historic bridges that are federally or privately owned, without a responsible agency owner, share a border with another state, or already in the process of Section 106 consultation (see Attachment 3 of the PA).
5. Does not apply to historic bridges when projects are conducted solely with local funds.
6. Does not apply to projects that have completed Section 106 compliance with 36 CFR 800 prior to execution of this PA.
7. Does not satisfy the requirements of Section 4(f) of the Department of Transportation (DOT) Act of 1966 (Section 4(f)), as amended.

For additional information, refer to Stipulation II. Applicability of the PA.

Border bridges between states will be subject to separate Section 106 processes. Each border bridge has an agreement between states identifying responsibilities. However, Section 106 consultation is carried out by both states.

The PA outlines the process by which the FHWA, with the assistance of the LADOTD, will ensure that the measures set forth in the PA will be carried out on bridge projects involving historic bridges in Louisiana. It was executed September 21, 2015 and will expire June 30, 2035.

#### **4.2.4—Historic Bridge Treatment Categories**

Eligible pre-1971 historic bridges in the Louisiana bridge inventory have been identified (See Attachment 1 of the PA for a list) and three historic bridge treatment categories, Preservation Priority Bridges, Preservation Candidate Bridges, and Non-Priority Bridges as defined below, have been assigned based on an accepted methodology. Refer to PA for procedures to be carried out for each bridge treatment category. The Environmental Section can provide guidance on procedures for each treatment category. Refer to Attachment 1 of the PA for treatment categories of each historic structure.

Preservation Priority Bridges: Historic bridges that will be retained in long-term use and will be subject to preventative maintenance, preservation, and rehabilitation, as needed.

Preservation Candidate Bridges: Historic Bridges designated for preventative maintenance, preservation, and rehabilitation, when prudent and feasible.

Non-Priority Bridges: Historic bridges that are not ideal candidates for long-term use are eligible for replacement when needed.

Ineligible pre-1971 historic bridges are eligible for replacement when needed.

#### **4.2.5—Management Plans**

Guidance is provided in the Statewide Management Plan for Historic Bridges and is applicable to any of the 150 historic bridges where an owner is seeking to preserve the bridge. Also, all Preservation Priority bridges have an individual management plan that provides information on the construction and maintenance activities recommended to keep each historic bridge in a state of good repair. Project Managers should refer to these documents, along with the PA, when scoping rehabilitation and preservation activities.

When substantial work is performed on a structure, individual management plans should be updated by Environmental Section to reflect the required work effort to keep the structure in a state of good repair in the future.

Historic Bridge Projects will be listed in the STIP as individual projects under the project number.

## 4.2.6—Project Management

When possible, Program and Project Managers should take the Historic Bridge Structured Training class as outlined in Section 4.2.2. The training provides guidance to managers on the proper steps to take during project development, construction, and oversight.

The Department requires the design or the supervision of the design be performed by an engineer that has completed the Historic Bridge Training in Louisiana. Quality assurance and guidance will be provided by a qualified professional from our Environmental Staff or designated consultant meeting the relevant standards outlined in the Archeology and Historic Preservation: Secretary of Interior’s Standards and Guidelines link: [https://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](https://www.nps.gov/history/local-law/arch_stnds_9.htm).

When developing and executing historic bridge projects LADOTD shall provide expertise following the guidance of the PA Stipulation VI B1 & 2. In-house engineering staff or experienced consultants will be responsible for executing historic bridge projects for LADOTD-owned bridges and providing guidance to non-LADOTD owners.

### 4.2.6.1—Classification and Labeling Historic Bridge Projects

Project Managers and Program Managers will label all projects in Project Systems that involve historic bridges covered by the PA in two ways:

1. The Project Name will include “(HBI)” at the end to indicate the project involves a Historic Bridge.
2. The “Remarks 2 Field in Project Systems” will be populated with “Historic Bridge Improvement (HBI)”. This indicates that the project contains a historic bridge. If a project contains multiple structures, the historic bridges will also be identified by the recall numbers. This field must be input consistently and will be utilized for developing annual reporting documents.
3. The “Type of Improvement Field” will be populated with a brief description of the proposed construction activities. For projects that have known activities that will sustain or improve the condition of the bridge such as Cleaning, Painting, and Structural repair, or Bridge Rehabilitation, the type of improvement may be populated with these activities and then consultation will be performed to make sure that the construction activities conform to the PA. For projects where the activity needs to be determined such as Feasibility, Replacement/Rehabilitation, Bridge Preventive Maintenance, etc., populate the field with the general activity or range of activities. Upon completion of the NEPA Process, determination of the preferred alternative, and the requirements of the PA have been satisfied, the “Type of Improvement Field” can be more specifically defined.

Additional fields for historic bridge structures have been added to BrM AASHTOWare and are copied into the DB2 DOTD.STRM\_MASTER table. The fields maintained in BrM relative to historic bridges are the existing “Historic Bridge Field Item 37” which identifies the eligibility of the bridge, the new “Historic Bridge Treatment Category Field” which identifies the treatment category for each structure contained in the PA, and the new “SHPO Number Field” which is a tracking number used by the State Historic Preservation Office. This information is imported to Project Systems and will be visible to the user when viewing the detail project reports.

### 4.2.6.2—Treatment of Historic Bridges

Stipulation VII of the PA outlines the commitments that LADOTD and FHWA have made through the PA and how each Historic Bridge Treatment Category in Stipulation III will be treated. Flowchart 4-1 and Flowchart 4-2 depict the procedures to be implemented when a project involves a Preservation Priority and Preservation Candidate Bridge, respectively.

For specific guidance see PA Attachment 4 – Treatment of Historic Bridges, Attachment 4A– Procedures for Rehabilitation Projects Affecting Preservation Priority Bridges and Attachment 4B – Procedures for Projects Affecting Preservation Candidate Bridges.

Non-Priority Bridges will be maintained in accordance with standard LADOTD practices. The Management Plan for Historic Bridges Statewide provides guidance on appropriate preventative maintenance and preservation activities for historic bridges. Demolition and replacement are options for Non-Priority Bridge when maintenance is no longer feasible and/or cost effective.

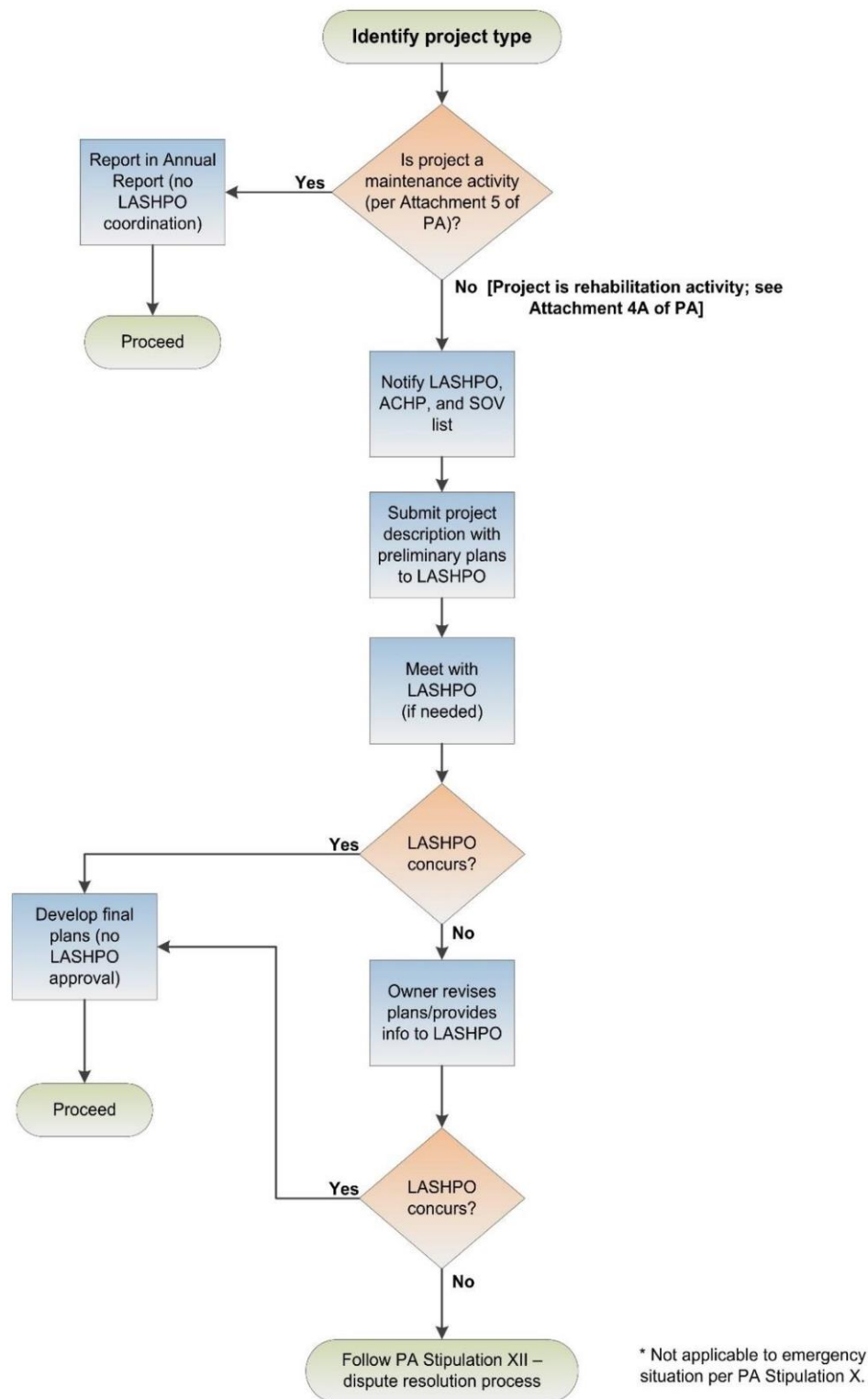
Activities not requiring review for historic bridges are outlined in PA Attachment 5 – Accepted Preventative Maintenance and Preservation Activities.

During emergency situations affecting historic bridges, it is acknowledged that the Department may not be able to contact the LASHPO prior to stabilizing the bridge or taking measures necessary based on the emergency circumstances. In emergency situations, the Department will contact LASHPO as soon as possible, generally within 72 hours of the event. Also, the Department will notify the ACHP as soon as possible, generally within 7 working days after the event. For more detailed information on how to handle emergency situations refer to Stipulation X of the PA.



### Historic Bridge Treatment Flowchart

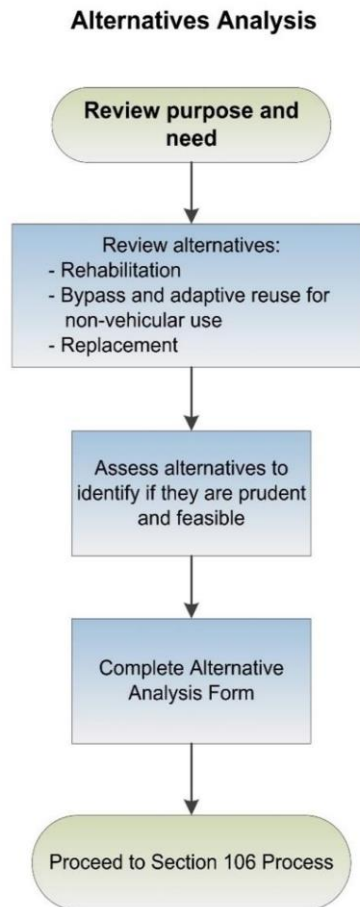
#### Procedures for Projects Affecting Preservation Priority Bridges\*



**Figure 4.2-1: Procedures for Projects Affecting Preservation Priority Bridge**

## **Historic Bridge Treatment Flowchart**

### **Procedures for Projects Affecting Preservation Candidate Bridges**



**Figure 4.2-2: Procedures for Projects Affecting Preservation Candidate Bridge**

#### ***4.2.6.3—Alternative Analysis***

When an alternative analysis is required, provide the results of the analysis in a form similar to the form shown in the PA under Attachment 4B on Page 7. As a minimum, the alternative analysis should explore the following alternatives:

##### **1. Rehabilitation on Site**

Recondition the structure to meet the purpose and need. This could involve widening the structure to improve safety or to meet some functional deficiency. A design exception by the Chief Engineer may be required if design guidelines cannot be fully obtained by the reconditioning of the structure. Recondition the structure to improve load posting. When load posting cannot be improved, a decision must be made on the amount of investment that will be made versus the benefits that may be obtained.

##### **2. Rehabilitation for one-way pair (rehabilitate historic bridge and construct new bridge)**

This involves the same type of rehabilitation in alternative 1 above, along with this construction of a new structure. Each structure would carry a direction of travel creating a couplet at the site. This is likely to be one of the most expensive alternatives, since it involves full rehabilitation and the

construction of a new structure. This could be an acceptable alternative if the purpose and need involves added capacity and the existing structure can be rehabilitated.

**3. Bypass and Adaptive reuse for non-vehicular use on site**

This alternative involves the construction of a new structure and potentially some rehabilitation of the old structure. Just like when the historic structure is transferred to another entity, the funding that would have been used to remove the structure may be used to recondition and repurpose the historic structure. If federal funds are to be used to continue to maintain the historic bridge under its new use, other federal funds such as Transportation Alternative (TA) funds should be used to repurpose the structure, in lieu of the removal funds. When the historic bridge is repurposed, just like when another entity accepts the structure, the state will have to enter into a memorandum of agreement with the SHPO's Office establishing the agreement to maintain the structure. It is unusual for the state to accept responsibility for these structures, however under the Complete Streets Program, there may be some opportunities in the future for investing in these types of structures.

**4. Replacement and/or Relocation**

Replacement is the last option when it is not prudent and feasible to maintain the structure for use and the structure does not meet the purpose and need for the project.

As part of the mitigation of the removal of the structure, the Department will market the bridge to the public. Under the marketing plan, an entity, organization, or private owner may accept the structure and enter into a memorandum of agreement with the Department and the SHPO's Office accepting responsibility for the preservation and long term maintenance of the historic structure. The estimated bridge removal cost for the whole bridge may potentially be used for the preservation of the historic structure and is reimbursed to the owner as expenditures occur. Typically, the portion of the structure to be relocated is carefully removed by the contractor and relocated to a near shore location or as previously arranged by the owner. Marketing should be complete prior to advertisement for the project, so any specific information relative to the removal of the structure can be communicated to the contractor.

### **4.3—INTERSTATE LIGHTING PROGRAM AND LIGHTING PERMITS ON STATE HIGHWAYS**

Electrical Engineer Manager in Bridge Design Section is the Program Manager overseeing the Interstate Lighting program and lighting permits on state highways. For Interstate highways, LADOTD administers a program to fund a portion of the initial installation costs. Local governments must enter into an agreement to maintain and operate the lighting. If lighting is installed along state highways, it must be paid for, owned, maintained, and operated by the local government (city, town, or parish). A permit must be obtained from LADOTD prior to any installation work so that we can ensure that the lighting meets all safety requirements.

Refer to LADOTD bridge design website for program details.