Bridge Inspection

Scope

This procedure applies to all bridges at Sacramento District flood control and navigation projects, as well as other bridges inspected by the District.

Policy

Engineering Division (ED) will plan, execute, and document the **inspections of all bridges** inspected by Sacramento District, including USACE public and nonpublic bridges, as well as bridges inspected by the District for other agencies.

Responsibility

The Dam Safety & Infrastructure Support Section is responsible for conducting the Sacramento District's bridge inspection program, including reporting, and inventory.

The Inspection Team Leader is responsible for scheduling inspections, categorizing the severity of recognized deficiencies, and for scheduling and accomplishing completion of corrective actions that are the responsibility of Engineering Division to accomplish, pending funding.

Distribution

Assistant Chief of Engineering Division

Chief of Dam Safety & Infrastructure Support Section*

Chief of Design Branch

Chief of Engineering Division

Chief of Geotechnical & Environmental Engineering Branch

Chief of Operations Technical Branch*

Civil Engineer*

Electrical Engineer*

Independent Technical Review Team*

Inspection Team Leader*

Mechanical Engineer*

Resource Provider

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Ownership

The Chief of Dam Safety & Infrastructure Support Section [Richard.A.Britzman@usace.army.mil?subject=PROP11L0-Bridge Inspection] is responsible for ensuring that this document is necessary and that it reflects actual practice.

References

Refer to:

- *Quality Management Plan for Sacramento District [http://iso9000.spk.usace.army.mil/docs/spkqmp.pdf]*
- *CFR Part 650 - Federal Regulation 23 Highways, Subpart C - National Bridge Inspection Standards [http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=23&PART=650&SUBPART=C&TYPE=TEXT&YEAR=2000]*
- FHWA Bridge Inspector's Training Manual/90
- AASHTO Manual for Condition Evaluation of Bridges
- AASHTO Standard Specifications for Highway Bridges
- AASHTO Interim Specifications
- *FHWA-DP-80-1 Underwater Inspection of Bridges [http://isddc.dot.gov/OLPFiles/FHWA/009738.pdf]*
- *ER 1110-2-111, USACE Bridge Safety Program [http://www.usace.army.mil/publications/eng-regs/er1110-2-111/entire.pdf]*
- *ER 1110-2-101, Reporting of Evidence of Distress of Civil Works Structures [http://www.usace.army.mil/publications/eng-regs/er1110-2-101/entire.pdf]*
- *EM 1110-2-2002, Evaluation and Repair of Concrete Structures [http://www.usace.army.mil/inet/usace-docs/eng-manuals/em1110-2-2002/toc.htm]*
- *CESPD R 1110-1-8, South Pacific Division Quality Management Plan [http://www.spd.usace.army.mil/toc.html]*
- CESPK OM 1110-2-4, Post-Earthquake, Preflood, and Periodic Inspections and Continuing Evaluations of Completed Civil Works Structures
- *Roles and Responsibilities [REF8020G]*
- *Managing Records [PROQ10L0]*

Definitions

Refer to the *Glossary of Engineering Quality System Terms and Acronyms [REFQ10L0]*, for definitions not listed here.

Corrective Actions - Corrective actions are designated as Category 1 or Category 2 depending on the severity of the deficiency. Category 1 corrective actions are considered to have a potential impact on the safe operation of the project, and are remedied immediately. Category 2 corrective actions are considered necessary, but do not impact the safe operation of the project, and as such, are scheduled and accomplished as funding permits.

Inspection Team - All field inspections shall be performed by a team, including a team leader from the Dam Safety & Infrastructure Support Section.

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Unit Leader - the individual in charge of the organizational unit that has been delegated responsibilities for bridge inspection, reporting and inventory shall be a registered professional engineer, be qualified for registration as a professional engineer under the laws of the state, or have a minimum of 10 years of experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the Bridge Inspectors Training Manual.

Inspection Team Leader - The individual in charge of a bridge inspection team shall have the qualifications of a unit leader, have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the Bridge Inspectors Training Manual, or have current certification as a level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's Program for National Certification of Engineering Technologies (NICET).

Records

Inspection reports are maintained in Dam Safety & Infrastructure Support Section (ED-GP). Refer to *Managing Records [PROQ10L0]*.

Activity Preface

All bridges inspected by the Sacramento District will be inspected according to the manual, "FHWA Bridge Inspector's Training Manual/90" to ensure their safety and structural integrity. Bridges owned by USACE shall be entered in the *Corps of Engineers Bridge Inventory System (CEBIS) [https://cebis.wes.army.mil/default.asp]*. Bridges owned by other agencies inspected under contract will be entered into the National Bridge Inventory System (NBIS). As part of the inspection, a load rating will be performed for each bridge.

A ten-year bridge inspection program budget and schedule will be developed for bridges owned and maintained by the Sacramento and San Francisco Districts, and routed through the Operations Technical Branch of Construction-Operations Division for approval and forwarded to CESPD-ED through CESPK-ED by 15 January of each year. The frequency of inspections will be as required by *ER 1110-2-111, USACE Bridge Safety Program [http://www.usace.army.mil/publications/eng-regs/er1110-2-111/entire.pdf]*.

Instrumentation data and reports on previous inspections will be reviewed prior to the inspection for particular important areas and for special equipment and personnel needs.

Inspection dates will be coordinated with project personnel and Operations Technical Branch personnel will be invited to attend.

An inspection report will be entered into the *CEBIS [https://cebis.wes.army.mil/default.asp]* for each inspection and will serve as a basis for determining the need for remedial work. Prior to each inspection, a pre-inspection brochure will be prepared, and a pre-inspection conference will be held for the purpose of coordinating the specific activities to be performed during the inspection. Each inspector to document field observations shall fill out an inspection checklist.

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An independent technical review team as defined in *CESPD R 1110-1-8, South Pacific Division Quality Management Plan [http://www.spd.usace.army.mil/toc.html]* will review and certify each inspection report for quality in bridge inspection and design, and the Chief of Engineering Division will electronically approve the report in CEBIS. Approval will be secured within 60 days of the inspection.

The job title Inspection Team refers to the following:

- Civil Engineer
- Mechanical Engineer
- Electrical Engineer

Prior Activity

Contract Review [PROP01L0]

Design Process for Civil Works Projects [PROP02L0]

Controlling O & M Type Manuals [PROQ03L0]

Management of Project Folders [PROQ07L0]

Managing As-Built & As-Constructed Drawings [PROQ08L0]

Chief of Dam Safety & Infrastructure Support Section

1. Schedule Bridge Inspections.

   USACE Bridge with Public Access

   - Schedule for Two-Year Inspection Cycle.

   USACE Bridge with no Public Access

   - Schedule for Five-Year Inspection Cycle.

2. Assign a Bridge Inspection Team Leader.

Inspection Team Leader

If Need Crane, goto task #3. Otherwise, goto task #4.

3. Schedule Caltrans Inspection Crane.

4. Coordinate Inspection Team preparation.

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If Survey needed

- Schedule Survey.

If USACE Bridge

- Coordinate with South Pacific Division.
- Coordinate with Operations Technical Branch.

If USACE Bridge, goto task #5. Otherwise, goto task #6.

Chief of Operations Technical Branch

5. Coordinate with Project Personnel.

Inspection Team Leader

6. Prepare Pre-Inspection Brochure.

Inspection Team

7. Attend Pre-Inspection Conference.
8. Prepare Load Rating.
9. Prepare Inspection Report.

Independent Technical Review Team

10. Reviews and Approve Inspection Report.

If Inspection Report Approved, goto task #11. Otherwise, goto task #9.

Inspection Team Leader

11. Distribute Conforming Report.

Chief of Dam Safety & Infrastructure Support Section

12. Maintain Records.

    Refer to *Managing Records [PROQ10L0]*.

End of activity.

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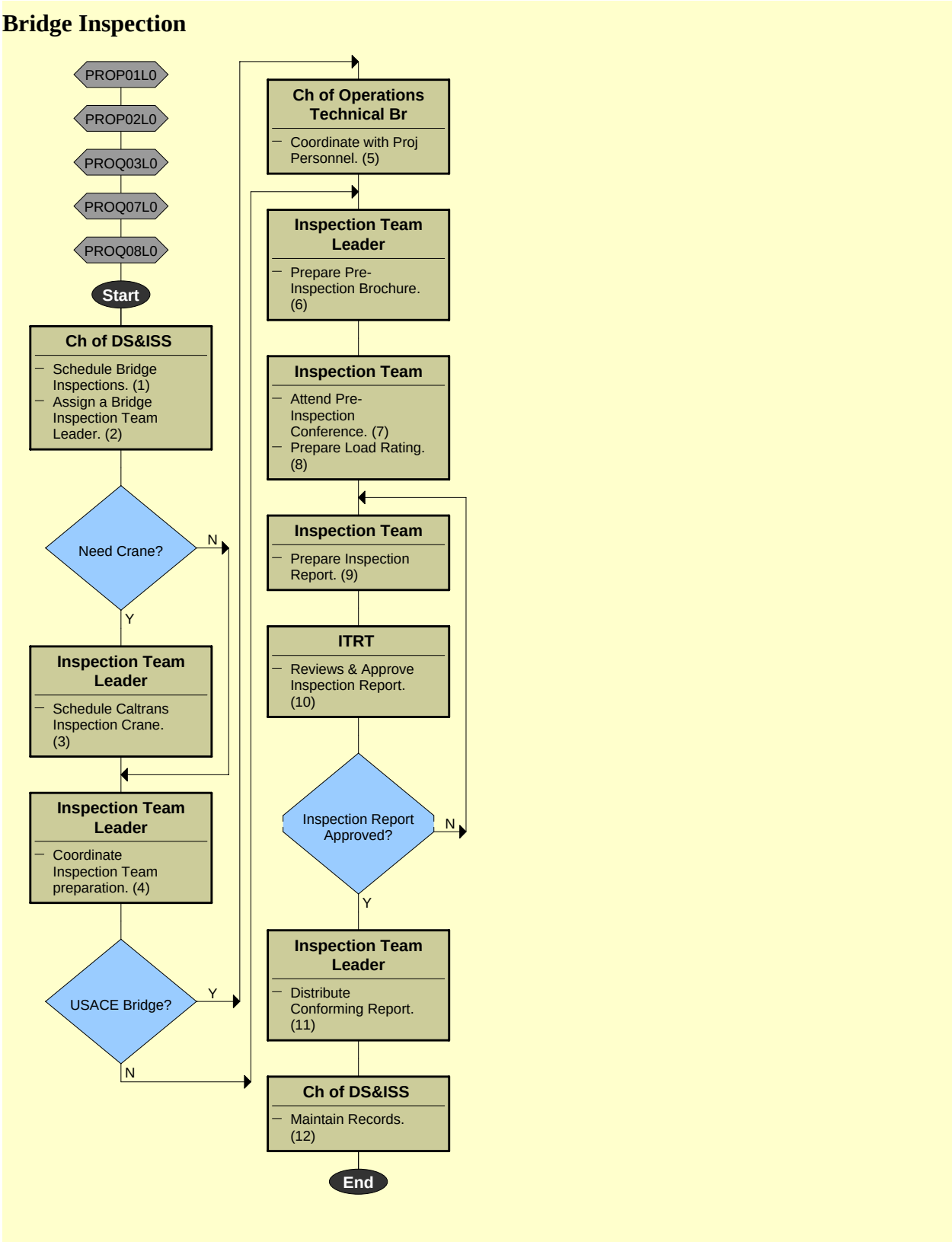
Flow Chart

Bridge Inspection



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