

Scope of Work
Bridge Preventative Maintenance FY15-FY18
Scope Date: May 2014

CONTRACT DATE: Anticipated July 2014
PROJECT NUMBER: TBD on Individual Task Orders
PROJECT LOCATION: Statewide
PROJECT CODE: TBD on Individual Task Orders

SECTION 1 GENERAL INFORMATION

SECTION 2 PRECONSTRUCTION WORK TASK DESCRIPTIONS

Comments regarding this scope may be directed to:

CDOT Headquarters Staff Bridge

TABLE OF CONTENTS

SECTION 1

- 1 PROJECT BACKGROUND
- 2 PROJECT COORDINATION
- 3 ROUTINE REPORTING AND BILLING
- 4 PERSONNEL QUALIFICATIONS
- 5 PROJECT DESIGN DATA AND STANDARDS

SECTION 2

- 1 SURVEY / ROW RESEARCH
- 2 UTILITY SURVEY/IDENTIFICATION
- 3 HYDRAULIC SURVEY/IDENTIFICATION
- 4 RAILROAD
- 5 ENVIRONMENTAL ASSESSMENT
- 6 THIRD PARTY REQUIREMENTS
- 7 DELIVERABLES

APPENDIX A – References

APPENDIX B – Example set of Bridge Surface Treatment Plans

SECTION 1

GENERAL INFORMATION

1 PROJECT BACKGROUND

The purpose of the Bridge Preventative Maintenance (BPM) project is to identify preservation action/preventive maintenance projects with staggered AD dates, identify project packaging options of the structures selected for preservation/preventive maintenance and publish The List of Structures Selected (LSS) for the preventive maintenance, for the next 4 to 5 years. Additionally, an Executive Summary will be provided that summarizes the intended preventive maintenance work, the project packages and staggered AD dates. The rationale will be provided to show why a group of structures are included in one construction package instead of another. Key issues of a project or structure within a project will be noted.

The purpose of the BPM project is also to gather data and information regarding the items needed to complete the top portion of Form 128 and to complete a basic cost estimate and design schedule. This is a data gathering task to identify issues or project challenges that will be completed under a future task order to deliver bid documents for the projects. The selected consultant will not be responsible to complete the Form 128 under this task order. The top portion of the Form 128 will be completed (filled-in) in the subsequent task order.

RAMP T.O. 1 will require The List of Structures Selected Year 1 (LSS Year 1) and this will consist of the entire list of selected structures, and additionally sub-divided lists that are grouped into Region projects, that will receive bridge preservation treatments in the first year of RAMP. The List of Structures Selected (LSS) will contain structures chosen by the Region Project/Structure Vetting Team. The base list for the printed LSS will be an electronic Excel spreadsheet. In addition to The LSS Year 1, The LSS Year 2 will be developed for the second year of RAMP. This 2nd tier LSS will be the next best candidates for preventive maintenance taken from the top candidates not used Year 1.

The LSS will be a printed original and an electronic file for each CDOT Region and CDOT program. A total conceptual construction cost estimate, for each bridge in the LSS and for each project in the Region will be provided, that includes all costs for items required to build each bridge and each project, including but not limited to mobilization, traffic control, signing and striping, erosion control, flagging, MCR Force Account and MCR Emerging Small Business, and construction engineering.

Work will start this project to identify which items noted on the Form 128 are present or potentially present at the sites, and will require site visits and other means.

If additional work will be required, for a particular structure to complete Form 128, this structure may be deferred to a later year LSS. If additional work is required to complete the form 128 for bridges on the LSS, an assessment of the potential risk to project schedule and costs and list of constraints on the work to mitigate the environmental impacts will be provided. All of this will be included in a separate Clearance Issue Identification Summary List and shall be provided for any structures in the LSSs that will require any additional work to complete the form 128. The structures selected Year 1 have been identified under a previous contract and will only require final design plans, specifications and designs. The CDOT Staff Bridge structure candidate spreadsheet (Excel format) is based on the structure data, has over 1400 RAMP candidates and has many filters for categorizing and sorting. Also to be provided by CDOT are spreadsheets for 2015 - 2019 Surface Treatment (ST) Projects. To the extent possible, candidates should be selected within ST project limits to minimize mobilization and traffic control costs. BPM Structure Candidates may be chosen from the 2015 - 2019 ST Projects and receive RAMP funding for the preservation work, but will need to be closely coordinated with the Regions. It is not necessary to take candidates from ST Projects and there may be benefits associated with the tight schedule and simplicity to keep the RAMP Project and ST Projects separate.

The Region Project/Structure Vetting Team will include the Consultant Project Manager (C/PM) and points of contact within each region. The other members will be chosen by the Region. The C/PM will provide to the Region insight and assistance in selecting the structures on the Structure List and provide to the Staff Bridge BPM Project Manager (BPM PM) the List of Structures Selected deliverables.

Representatives of the Consultants will need to take up residence for short periods of time in Staff Bridge to access the candidate lists, PONTIS database and structure documents. There are limited work areas in Staff Bridge so coordination will be important.

Existing plans and other document gathering will be a combined effort by the Consultant Team and Staff Bridge, but the Consultant Team should assume that this will be their responsibility with the assistance of, and brief training by those assisting in Staff Bridge. The Consultant Team should assume that the schedules of those assisting in Staff Bridge will limit the amount of assistance that they can provide in the gathering effort.

New Standard Preventive Maintenance Worksheets will be utilized to show details of the work that is repetitive at all bridges and across all Regions to facilitate the plan preparation. The details shown may not accommodate all the individual cases encountered. For example, there are many different types of existing expansion devices and geometries. The new standard worksheets cover previous similar work

Bridge BPM, Structure Selection Preservation Guidance:

Bridge preservation work will focus on structures with decks in good condition that are bare or lack a waterproofing membrane and also bridges with leaking joints. Minor deck rehabilitation may be necessary, but it is the intent to try to choose bridges still in relatively good condition and try to stay below the 10% to 15% range, Class 2. Class 1 should not be used. It is desirable that structure candidates be chosen to avoid Class 3. Expansion device removal/replacement candidates should be chosen so that 0-2 Inch (Asphaltic Plug) or 0-4 Inch expansion devices can be used, as applicable. If a joint is leaking, new seals may be an option. If only the existing seal/gland of an existing old-style (steel angle armoring/anchoring) strip seal device is leaking it will most likely be beneficial to replace the entire device with the new-style strip seal device. Consideration should be made to program bridges involving long duration clearance actions in out. It is desired that structures be selected on interstates or the highest AADT routes.

It shall be verified, from all available existing plans, for candidates selected from the Staff Bridge data-base driven spreadsheet and identified as needing waterproofing membrane, that waterproofing membrane is indeed absent.

The CDOT Regions will distribute, or assist the RAMP Project Manager to distribute, reports or plans, provided by the Consultant, for necessary reviews to the appropriate persons in the Regions, and assist in coordinating with the Consultant.

The Region Environmental Specialty Unit will provide guidance the Consultant may need so that the Consultant may proceed efficiently in clearing the list of bridges environmentally, which will be finished in a future task order. The Region Environmental Specialty Unit will review the environmental clearance work and documentation the Consultant provides the Region Environmental Specialty Unit (mostly in a future task order) and the filled-in top of Form 128, also provided to the Region Specialty Unit by the Consultant.

The BPM Project Manager, with the assistance of the Staff Bridge Region Specialty Units, will review and provide comments back to the Consultant on the lists, executive summaries, conceptual cost estimates and reports provided by the Consultant as required under this task order and the RAMP Project Manager will provide RAMP Project guidance.

2 PROJECT COORDINATION

A. Routine Working Contact

The routine working contact will be between the CDOT Staff Bridge BPM Project Manager (BPM PM) and the Consultant Project Manager (C/PM).

B. Consultant Project Manager Requirements

- a. Manage all sub-consultants and disciplines required to develop the BPM projects.
- b. Meet with the Regional Program Engineers and other key regional staff prior to performing any Structure Pre-scoping to obtain any existing knowledge pertinent to the projects and obtain other region specific information.
- c. Kick-off Meeting.
- d. Progress Meetings at Staff Bridge (monthly).
- e. Design Coordination Meetings (total to be determined by Consultant Project Manager).
- f. Provide a written synopsis or copy of their respective contacts (both by telephone and in person) with others.
- g. Provide copies of pertinent written communications

3 ROUTINE REPORTING AND BILLING

The Consultant will provide the following on a routine basis:

A. Coordination

Coordination of all contract activities by the C/PM

B. Periodic Reports and Billings

The periodic reports and billings required by CDOT Procedural Directive 400.2 (Monitoring Consultant Contracts).

C. Minutes of all Meetings

The minutes will be completed and provided to the RAMP PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the “Action Item”, the party responsible for accomplishing it, and the proposed completion date.

D. General Reports and Submittals

In general, all reports and submittals must be approved by CDOT prior to their content being utilized in follow-up work effort.

E. Bridge Location Work Plan and Quarterly Status

- a. The C/PM shall provide a workplan, estimated cash flow, schedule and project controls for both design and construction phases to CDOT. A quarterly Progress Report, one page, suitable for presenting to the CDOT Highway Commission, shall be submitted to the Staff Bridge BPM PM.
- b. The consultant will be responsible for meeting all timeframes and deliverable items identified in their schedule and work plan that are within their scope. Items such as 3rd party review time and other critical path elements not within the Consultant's control should be given reasonable time in the schedule but will not be the Consultant's responsibility.

4 PERSONNEL QUALIFICATIONS

All work will be performed under the direction of, and certified, by a Licensed Professional Engineer (PE) who is registered with the Colorado State Board of Registration for Professional Engineers. .

5 PROJECT DESIGN DATA AND STANDARDS

A. General

Appendix A is a list of technical references applicable to CDOT work. The consultant is responsible for ensuring compliance with the latest CDOT adopted version of the listed references. Conflicts in criteria shall be resolved by the Staff Bridge BPM PM and/or Region Staff.

SECTION 2

PRECONSTRUCTION WORK TASK DESCRIPTIONS

i. SURVEY DATA RESEARCH/Right-of-Way

Identify if the preventive scope of work will impact R.O.W. If so, research shall be done as per CDOT Survey Manual and the CDOT Right-of-Way Manual. The following deliverables should be provided:

- A. Provide current Tax Assessor level Ownership Maps
- B. Calculate and define relevant ROW lines
- C. Identify potentially affected landowners
- D. Establish project control
- E. Provide existing ROW Maps/Plans

No site work required.

ii. UTILITY SURVEY/IDENTIFICATION

Determine what utilities exist in the project vicinity, the general location of the utility with reference to the bridge, the contact information for that utility, obtain any plans from utility owners and provide key maps.

iii. RAILROAD

If a RR is present identify if the scope of preventive maintenance work will require access to RR ROW or if RR Flagging will be required to perform work. If so:

- A. Obtain ROW plans within 1 mile of project along the track.
- B. Identify if RR access roads are present.
- C. Identify if RR drainage structures are present.
- D. Obtain existing plans for horizontal/vertical clearances.
- E. Identify any existing horizontal/vertical clearance issues compared to current standards.
- F. Photo document crossing.
- G. Provide Existing C&M agreements and easement agreements.
- H. Coordinate with the region utilities coordinator to attain a maintenance consent letter with the RR one month prior to the project AD date.

iv. ENVIRONMENTAL ASSESSMENT

The Consultant shall coordinate with Region Environmental Manager(s) and Headquarters Environmental Programs Branch to develop, review and approve methodologies and a standard format for an initial environmental scan for the subject bridges. This is a screening effort that will not involve NEPA-level investigation, but will include site visits to gather information. The initial scans, site visit information and reports will document preliminary data collection, evaluation of resource issues in relation to proposed bridge preventative maintenance, and recommendations for streamlining the NEPA clearances and permitting processes for each structure. The goal of this effort is to categorize individual bridge projects with regard to their likely ease of environmental clearance and permitting. During the course of the work it would be beneficial to identify and develop any programmatic agreements to increase efficiency of the BPM program.

A. Data Collection

Given the varied preventative maintenance needs of each structure, the initial desktop data collection should consist of readily available sources such as: CDOT databases; engineering design; aerial mapping; Colorado Natural Diversity Information System Web Site; and U.S. Fish and Wildlife Service Candidate, Threatened, and Endangered Species County Lists & Critical Habitat mapping. The next steps of the project will consist of additional field evaluations and data collection efforts as determined by the initial environmental scans.

This initial data collection should address, to the degree possible, resource issues identified on the top of Form 128 to determine whether or not they would likely require analysis. These topics would include, but not limited to:

- Air Quality
- Noise
- Hazardous Waste
- Farmland Protection
- Threatened or Endangered Species
- Migratory Birds and Raptors
- Wetlands and Waters of the US
- Archaeology
- Paleontology
- History (bridge and surrounding area)
- 4(f), 6(f)
- Aesthetics
- Tribal Lands
- Local Agencies
- Adjacent projects
- Recreation
- Other

B. Evaluation

Evaluations should be concise discussions of each environmental resource issue as it relates to the specific bridge project. These evaluations should consider the anticipated level of bridge maintenance and methods. For example, a bridge project over open water or a canal would have the potential to affect different resources than a project over a railroad line or another road.

Again, this stage of project evaluation is not at the NEPA level, but at a screening level intended to identify the likely complexity of the environmental clearance process for the project. The evaluation will answer the questions of what environmental issues likely pertain to each individual project and how they would affect project schedule. For example, a project likely to require right-of-way acquisition or to impact Section 4(f) resources typically would have a more complicated clearance process than most other projects.

C. Recommendations

As a result of the evaluation, the Consultant will provide recommended classification of each individual bridge project with regard to the likely level of effort needed to reach environmental clearance. For example, simple engineering projects in locations with minimal environmental constraints would be able to be cleared and implemented in early years, while more complicated engineering projects with more environmental constraints would be identified as candidates for out years. In addition to identifying the expected complexity of the projects, the Consultant will identify next steps for each bridge and process streamlining opportunities such as programmatic agreements for Archaeology, Paleontology and Historic resources, bundling multiple 404 permits, and standard construction methods and specifications intended to standardize project implementation or mitigation efforts.

v. THIRD PARTY REQUIREMENTS

- a. Local Agencies involved
 - a. Provide a list of local agency contacts
 - b. Provide a list of permits required
 - c. Adjacent projects that may be occurring
- b. Other third party requirements

vi. DELIVERABLES (Beginning November of 2014 is based on upon NTP in July. Actual date subject to change upon actual NTP.

(Yearly list of deliverables in order of anticipated delivery)

- A. The List of Structures Selected in print format and the electronic Excel format base list
- B. Executive Summary, including staggered option AD dates.
- C. Estimate of Total Conceptual Construction Cost for each bridge, Total Conceptual Construction Cost for each Project and Total Conceptual Construction Cost for each Region, (in standard Excel format)
- D. Schedule for the design and plan preparation of all bridges in The List of Structures Selected (LSS) (in MS Project)
- E. Statewide and regional BPM cash flow for both design and construction phases.
- F. Assist with compiling regional structure investment summaries by obtaining repair/rehabilitation lists from Staff Bridge unit leaders and bridge replacement lists from the Bridge Enterprise.
- G. Plans and Specifications for FOR Meetings (dates to be determined). Instead of an FIR Plan submittal, the Design Consultant will submit a plan status set and list of Specifications for CDOT's information and review. No FIR meeting will be held.
- H. Bridge Plan Package Sheets required in addition to the standard detail sheets to finish off the plan set (PS&E)
- I. Preventive Maintenance Special Provisions
- J. Complete/Fill-in top of Form 128 and provide all the necessary documentation for all bridges in assigned Region(s), Year 1, for signature by Region Environmental Manager (due with PS&E submittal). For each plan package, one Form shall be used to cover all bridges within the package.
- K. Preventive Maintenance Recommendation Summary Sheet for each bridge (8 ½" x 11").
- L. Written Quarterly Progress Report
- M. All meeting minutes and phone call logs with synopsis.

APPENDIX A

REFERENCES

- 1 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) PUBLICATIONS (using latest approved versions):
 - A. Roadside Design Guide

- 2 COLORADO DEPARTMENT OF TRANSPORTATION PUBLICATIONS (using latest approved versions):
 - A. CDOT Design Guide (all volumes)
 - B. Project Development Manual
 - C. Erosion Control and Storm Water Quality Guide
 - D. Field Log of Structures
 - E. Drainage Design Manual
 - F. CDOT Survey Manual
 - G. CDOT Design Guide, Computer Aided Drafting (CAD)
 - H. Erosion Control and Storm water Quality Guide
 - I. Right-of-Way Manual, Chapter 2, Plans and Descriptions Procedures and General Information
 - J. Utility Manual