WORK CANDIDATES
and
CRTICAL FINDING GUIDANCE

Guidance for Adding Work Candidates

Intent

Work Candidates placed in BrM should be limited to maintenance level type activities. They are intended to be used by MDT Maintenance and County maintenance forces, so they can quickly and easily, find and prioritize necessary maintenance level repairs. The Work Candidates included should be able to be completed by Maintenance personnel, with or without the assistance of the Bridge Maintenance Engineer or County Engineers. They should also be actions that can be completed and closed out, i.e. – "Monitor element for…" is *not* an appropriate Work Candidates.

Work Candidates in BrM are *NOT* intended to be used by designers and engineers for querying Federal Aid project level repair and rehab activities. Rather, Federal Aid project developers (engineers, designers, and consultants) determine the scope of bridge rehabilitation and replacement activities by querying general bridge and element level conditions. Although engineers and developers will include Work Candidates that have been input into SMS in Federal Aid rehab projects, they are not used in initial project development.

Do not duplicate existing Work Candidates in subsequent inspections for work that has not been completed. If a Work Candidate exists, and the work was not done and still needs to be completed, simply add a comment such as "DD/MM/YYY – Existing recommended work candidate has not been completed and is still recommended".

If the work on a specific Work Candidate has been completed, but the work is now needed again, complete and close out the previous Work Candidate with the date completed (if known) and then add a new Work Candidate. This typically applies to

chronic type maintenance issues such debris removal, clogged deck drains, cleaning off caps, etc… For example, completing and closing the previous Debris Removal Work Candidate and adding a new Debris Removal Work Candidate (when debris removal was actually done between inspections), allows for the tracking and documenting the fact that a specific bridge or pier may have chronic debris issues.

Examples of Work Candidates to include in SMS:

- Object marker repair/replace
- Approach Guardrail repairs
- Potholes/ deck spalls
- Missing bolts
- Loose nuts
- Clean debris out of deck drains
- Reset Elastomeric bearings
- Repairs to rotten, deteriorated, or shifted Timber elements (cap, piles, decks, girders, rails, etc.)
- Loose steel joints or guard angles (sliding plates and other embedded type joints and headers that pose a safety hazard when they come out)
- Repair impact damage (rails, posts, prestress or steel beams, etc.)
- Remove channel debris on piers/abutments
- Cracks in Steel members (these may or may not be critical; may require an immediate call to Helena)
- Clean debris out of joints
- Clean debris off caps/bearings
- Remove vegetation or clear trees that prevent inspection of bridge elements, grow within the shadow of the bridge, restrict traveler's visibility, or could fall and damage the bridge
- Wingwall/backwall issues (including erosion under or around the wingwall)
- Approach roadway settlement or side slope erosion near the bridge
- Scour or erosion issues that can be mitigated with small scale operation to place rip-rap. These would typically be small, county owned structures (but possibly State owned) on small streams or washes.

Examples of Work Candidates ***NOT*** to include in BrM:

- Scour Issues that are on large bridges over large waterways that require hydraulic engineering and a major project to mitigate.

- Deck seal or deck overlay
- "Monitor…"
    - Do not recommend a bridge or element to be "monitored". If this is necessary, an accelerated inspection interval is the proper procedure to do this.
- Larger repair items that Maintenance does not have the resources to complete

There are many gray areas, so please don't be afraid to call Helena and ask if something specific is appropriate to be included as a Work Candidates in BrM.

Procedures for inputting Work Candidates:

Here are some basic guidelines to follow when inputting Work Candidates. Under the "WORK" tab in BrM, select "WORK CANDIDATES". Click the "Add New" box. This will take you to the work page for entering a new Work Candidate.

- ACTION TYPE:
    - Designate the action type from the drop-down box. This presents options for the general area that the action will apply (Deck, Joints, Scour, Superstructure, Substructure, Timber, etc…) This action type filters down the actions to make it easier to select an action.
- ACTION:
    - The options in the Action tab are dependent on the Action Type selected. For example, if "Deck" was selected as an Action Type, the options presented in the Action drop down are specific to deck repairs; Class A, Class B, Drains, deck overlay, approach slab, etc…
- DATE RECOMMENDED:
    - Enter the date of the recommendation. This will usually correspond with the inspection date unless it is special inspection of some type.
- PRIORITY:
    - Designate the Work Candidate as Low, Medium, or High priority.
    - Base this on your judgement and the level of structural risk associated or if it presents an immediate or imminent safety hazard, designate it as high.
    - Low Priority examples: clean joints, repair curb, repair cap spall, etc…
    - High Priority examples: Repair rotten timber cap, Repair loose sliding plate joint, remove debris on pier, etc…

    - When you feel the issue needs an urgent review from someone in Helena or the item may be Critical, contact Bridge Management directly and immediately (See Critical Findings Chapter).
- STATUS:
    - All new Work Candidates input into SMS should be designated as "Repair Suggestion".
    - If you notice during an inspection or are notified by the County or MDT Maintenance that an item has been completed, change the Status to "Work Complete". This also triggers/requires the following to satisfy the 90 Post Rehab Inspection requirement:
        - In the Comments section, add a quick description of the work done, who did the work (or who notified you), and when it was done (or when you noticed it was complete).
        - Any documents, repair details, or correspondence that you feel is relevant should be put in the documents tab of the repair.

- COMMENTS:
    - Include a one or two sentence description of the repair issue. Include a description of the location (specific span, bent, pile, joint, etc…)

CRITICAL FINDING GUIDANCE

Definitions:

Official Code of Federal Regulations Definition:

Title 23, Subpart C, 650.305 – A Critical Finding is a structural or safety related deficiency that requires immediate follow-up inspection or action. This can be further defined to note that immediate attention or follow-up is needed because the condition of the structure is a current or imminent danger or safety hazard to the traveling public.

To Simplify:

A Critical Finding is declared when a defect on or related to a bridge is causing a current or imminent danger or safety hazard to the traveling public. This includes instances where immediate repairs are taken to correct a defect, but

also include instances where no physical repair actions are taken but the bridge is either closed, restricted (lane or weight restrictions), or the inspection frequency is increased. All the actions stated above satisfy the "immediate attention or follow-up" requirement of Title 23, Subpart C. 650.305.

Overview:

Critical Findings are documented in the "CRITICAL FINDINGS" tab in SMS. Only Bridge Management Personnel in Helena can *officially* designate an issue as a Critical Finding in SMS.

Critical Findings are to be documented on State and non-State-owned structures.

Procedure:

The following procedures should be followed when a suspected Critical Finding is discovered:

1. Immediately contact Bridge Management personnel in Helena to make a verbally notification and discuss. After contacting Bridge Management and verbally notifying follow up with an email documenting the discussion. If you are unsure if something is a Critical Finding, we can help make that determination when you call the Bridge Bureau. If you feel the bridge needs to be closed immediately because of imminent danger to the public, contact the Montana Highway Patrol or Sheriff's office for assistance.

Helena MDT call down list:

- Bridge Maintenance Engineers:
  - 444-6320 (Dave Crumley)
  - 444-3535 (Jarrod Plummer)
  - 439-1472 (Dave Crumley - cell)
  - 461-2118 (Jarrod Plummer - cell)
- Bridge Management Engineer
  - 444-9921 (Andy)
- Bridge Inspection Engineer
  - 455-8323 (Henry Henning)
- Other Bridge Management Section Engineers
  - 444-6264 (Tim Welter)
- Other

- _____
- _____
- _____
- _____

Roles and Responsibilities:

1. After verbally contacting someone the Bridge Management section, it is the Bridge Management's responsibility to officially declare a critical finding. The Bridge Management section will also be responsible for contacting or delegating contact of the appropriate personnel to coordinate closure, restrictions, or other necessary actions.
    - The appropriate personnel may include one or more of the following entities: the local MDT Maintenance Chief and/or MDT Maintenance Superintendent, or the appropriate County or City personnel for non-State-owned-structures.
2. If someone in the Bridge Management Section can't be verbally reached in a timely manner, and in your judgement, an immediate closure is necessary because of an acute and immediate or imminent condition that endangers the traveling public, follow the procedure below:
    - Document the finding and send email and text or voicemail notifications to all Bridge Management section personnel and their cell phones.
    - Contact the local MDT Maintenance Chief and/or MDT Maintenance Superintendent, or the appropriate County or City personnel for non-State-owned structures, so appropriate traffic control can be installed. Inform them of the urgency of the situation and whether the situation is urgent enough to require the immediate assistance of the MHP or Sheriff.
    - Local Contact Numbers for reference:
        - MDT Maintenance/District Personnel
            - _____
            - _____
            - _____
        - Local Officials
            - _____

- _____
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- **Documenting the Finding**Send photos by text to our cell phones or work e-mail for discussion.
- If found during the inspection, document the issue or defect in the element description.
- When documenting a new issue create a work candidate in BrM using the appropriate action. Set the priority to "High" and add comments
    - Take plenty of photos of the issue
    - Document the location of the issue
    - Take measurements of the element or defect

Examples of Critical Findings:

- Large cracks in steel girders
- Cracks in any Fracture Critical steel member
- Buckling or major out of plane distortion of truss compression members
- Major impacts to steel or prestress girders
- Missing, severely damaged, or failed timber piles
- Failed timber caps
- Holes in timber or concrete decks
- Settlement of a bridge pier or abutment
- Approach roadway voids in the travel way (this is not really a bridge issue, but we treat it the same as a Critical Finding)
- Scour on a "poke and wade" inspection that indicates loss of bearing under a large portion of the footing
- Any other damage or deterioration to an element that severely impacts the capacity or stability of a structure or culvert or endangers the traveling public