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Bridge Inspection Database Outline

The Federal Highway Administration through the National Bridge Inspection (NBI) program requires that a safety inspection is performed for all bridges once every two years at a minimum. This is to ensure that bridges are maintained such that they are safe to use by the public. In practice. This entails documenting any deficiencies in the bridge, example a crack in a beam, so that the owners, such as the state government, can identify what maintenance will needs to be performed.

The inspection process is imperative for what is known as Fracture Critical bridges. These are typically bridges with two or less load carrying members such that if one of the members fails, the entire bridge will collapse. An excellent example is a through truss bridge, see photo below. The top and bottom horizontal members are called the top and bottom chord. If either of those fails on one side of the bridge, then the entire bridge will fail. Because Fracture Critical bridges are prone to sudden failure, they are required to be inspected once a year.

Bridge inspection project management is a complex task that involves juggling personnel and equipment to ensure that bridges are inspected on-time and on-budget while producing a high-quality deliverable for the client. Currently, at my company it is difficult for a project manager to take a snap-shot of the project at any point. He or she must rely on employee timesheet input that eventually percolates up to the project manager, who then needs to parse the information to determine the status of a bridge. However, bridge inspection work can sometimes take place over several weeks, and can give a false indication that a bridge is below budget. The purpose of the database is to give more tools to the project manager to better track the status of a bridge’s inspection.