



Scour Signature

PROBLEM

Many bridges are damaged by the effects from scour annually. Knowledge of the condition of the bridge foundation is critical to maintaining bridge performance and long-term life cycle decisions. Scour is the decay of foundations due to water flow and removal of foundation material. The determination of Scour conditions are inspected by underwater bridge inspection which is highly variable, inaccurate and difficult to quantify

DECISION

Bridge operational safety and preventative maintenance to extend the life of the bridge based on measured rate of foundation deterioration.

MEASUREMENT

Periodic digital snapshot of the foundation at each pier, using our patent pending scour instrument, of a bridge's foundation signature and is archived in IntelliStruct. Compliments the two-year visual inspection with a digital measured performance indicator compared over time. Signature can support a preliminary live load test for preliminary load rating.

ANALYTICS

A series of 2-D foundation profiles are measured and recorded for position and time. A complete foundation and pier map is created by an overlay of the 2-D profile creating a 3-D signature. The signature is reproduced on a 2-year inspection cycle or after an event such as a flood or hurricane. Overlay of different bridge scour signatures can measure the amount and rate of scour effects and foundation deterioration.

BENEFITS

Predictive performance supports safer operation and avoids accidents or bridge failure. Allows for predictive maintenance cycles and extended bridge life cycle.

BEST PRACTICES

Scour inspection is used globally. China, Japan, Europe and USA are reviewing more advance methods to measure scour effects versus less reliable manual scour inspections