



YSI Water Quality Monitoring Buoys Help Connecticut DOT Protect the Housatonic River

When replacement of the Sikorski Bridge spanning the Housatonic River was authorized, Paul Corrente and the Connecticut Department of Transportation (CT DOT) set about the design and development of a water quality monitoring program to monitor the contractor's in-water activities to insure full protection of the river from perturbation. Corrente and his colleagues at CT DOT and Connecticut Department of Environmental Protection (CT DEP) have many years of

that data in real-time by telemetry. These buoys are configured to collect water quality at discrete depths in vertical profile using any of YSI's multiparameter sondes. Corrente had the alternative solution for their monitoring requirements and now had the task of convincing budget authorities that this technology should be used instead of the manual method. "The cost up-front is the obstacle," said Corrente. "That's the major hurdle, but **in the long run it saves risk of injury, labor, operating costs and provides continuous monitoring of the parameters that we need, and in real-time ... the equipment is excellent.**"



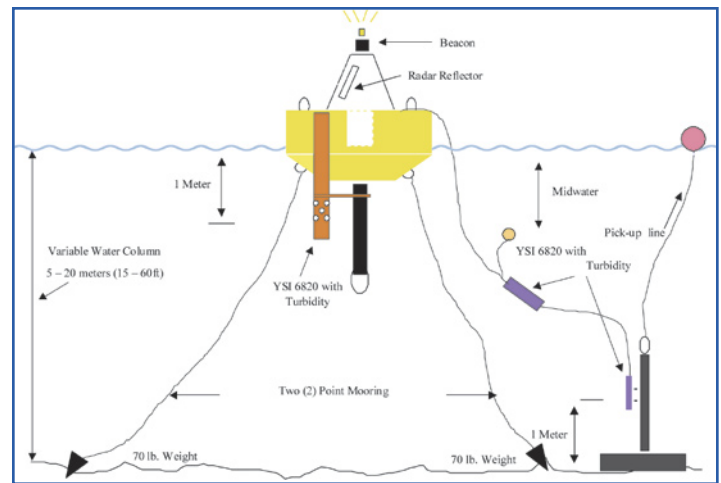
EMM550 Data Buoy deployed upstream of Sikorski Bridge.

Corrente convinced his colleagues of the need for change and included two YSI monitoring buoys in the construction contract (purchase, installation and maintenance by contractor). Once the monitoring program is complete, the buoys will be transferred to CT DEP for future monitoring projects.

experience in water quality monitoring at such sites. They know that the operation of such a program is vital to the protection of the river, but that is its also complex, expensive and can often be dangerous.

Both of CT DOT's data buoys are equipped with two YSI 6820 multiparameter sondes, which can measure up to 14 water quality parameters, including turbidity. In addition, each data buoy is equipped with a datalogger, the telemetry devices necessary for two-way communication, and the appropriate moorings and riggings. Corrente said, "Turbidity is typically the number one [water quality] problem ... **the YSI buoys are the greatest thing out there for monitoring this kind of site.**"

The US EPA and CT DEP, through the Clean Water Act, require that construction activities, such as that for the replacement of the Sikorski Bridge, not result in a 5 NTU or greater increase of turbidity, above background levels, at the same depth, for two continuous hours. Making certain that in-water construction adheres to these criteria is CT DOT's responsibility.



EMM550 Data Buoy with moorings and 6820 sonde placements.

Replacement of the Sikorski Bridge is slated to require three years of in-water construction. In order to insure that river water quality is not impacted as defined by Clean Water Act criteria, monitoring must be continuous and maintained for the duration of the project. In the past, water quality monitoring at such a site was performed hourly from a boat during in-water construction activities, with handheld technology being used to make measurements in vertical profile, upstream and downstream of the site. However, before proceeding with their standard modes and methods, Corrente looked for alternatives, and found a viable one being employed by his counterparts at CT DEP: YSI water quality data buoys.

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CT DEP uses three YSI EMM550 Data Buoys to continuously monitor water quality in principal areas and receive