



United States Department of the Interior
U.S. GEOLOGICAL SURVEY

Reston, Virginia 20192

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Memorandum

OFFICE OF SURFACE WATER TECHNICAL MEMORANDUM 2016.05

SUBJECT: Availability of Techniques and Methods 3-C5, Sediment Acoustic Index Method for Computing Continuous Suspended-Sediment Concentrations

This memorandum announces the availability of Techniques and Methods, 3–C5, Sediment Acoustic Index Method for Computing Continuous Suspended-Sediment Concentrations. The report is now available at: <https://pubs.er.usgs.gov/publication/tm3C5>.

The sediment acoustic index method provides continuous data on suspended-sediment concentration and load data that are critical to address sediment-associated issues in water supply, engineering, and ecology. Advantages of this approach over other methods include: (1) better representation of cross-sectional conditions from large measurement volumes, compared to measurements at a single point; (2) high temporal resolution of collected data; (3) data integrity even when biofouling is present; (4) less rating curve hysteresis compared to using only streamflow as a surrogate; and (5) inclusion of continuous streamflow velocity with the dataset. This approach also can leverage existing activities at many sites with acoustic Doppler velocity meters (ADVMs) used in streamflow velocity monitoring. These approved methods pave the way to advance the strategic goals of the USGS in its mission.

This report provides much-needed standard techniques for sediment acoustic index methods to help ensure accurate and comparable documented results. Research and experience in sediment acoustics is ongoing, as is the development of ADVMs. Therefore it is likely that guidance on the application of these methods will change and future revisions to USGS policy and guidance will be necessary. Users of these methods are encouraged to look for up to date information at the Sediment Acoustic Leadership Team web site (water.usgs.gov/osw/SALT), on training, policy, and associated software including the Surrogate Analysis and Index Developer tool. For further information or questions, please contact Mark Landers (landers@usgs.gov).

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