

Hand-held LSPIV Guidelines – On Site Checklist

Video and Site Requirements

Video

- Video resolution is at least 640 x 480 pixels (most smart phone cameras)
- Minimum of 15 frames per second
- No wide angle lens or other distortion
- Video duration at least 60 to 90 seconds
- Camera platform is as stable as possible by mounting on a tripod or bracing against a fixed object

Site

- Surface flow disturbance patterns are uniform with time
- No effects of pier wake or other flow disturbances. If near a structure, shoot video looking upstream.
- Ideally, river has a stable bottom not subject to erosion



Video from bank: Field of view includes all visible items, very well defined control points

Field of View Requirements

Visible items

- Entire width of channel at measurement cross-section
- Fixed locations on both sides of the channel (e.g. banks, trees, structures)
- Minimum of 4 control points

Camera angle

- High angle is best (closest to 90°), therefore try to look down on the water as opposed to looking across it
- If standing on the bank, ensure angle is higher than 15°
- If standing on a bridge, ensure all visible items are in the field of view

Lighting

- Avoid shadows and reflections
- Avoid sparkling patterns on water surface



Video from bridge: Field of view includes both banks, control points not well defined

Control Points and Measurements

Control Points

- Minimum of 4 fixed control points, positioned as to maximize size of velocity field in camera field of view
- At least 2 on each bank, but can add more to enlarge visible velocity field
- Located at or as close as possible to the water surface
- Distance between points is known or can be measured

Note: do not need to form a perfect square

Examples: rocks, trees, stakes, pylons

Additional Measurements

- Distances between control points, including diagonals
- One cross-section bathymetry
- Fill in LSPIV Data Submission Form

Contact

Frank Engel (USGS)

217-328-9774

fengel@usgs.gov

Elizabeth Jamieson (ECCC)

613-992-9337

Elizabeth.jamieson@canada.ca

C. Marcelo Garcia (CETA)

cgarcia2mjc@gmail.com