**Video: HDL-VLT\_7-1-Force Balance Flume.mp4**

**YouTube Information:**

Title: Virtual Hydraulics Lab Tour – Force Balance Flume

Description: An introduction to the Force Balance Flume, which is used to measure hydrodynamic forces on a variety of different objects, such as a model of a bridge deck section.

Video: mp4

Captions: attached

Thumbnail file: attached

Public Listing Type: Unlisted (we only want people to discover this video through our website and the virtual tour.)

**Permissions, copyright, licensing:**

Video: The entire video is FHWA-owned.

0:15 – 0:23: FHWA Contractor. Model release form for Pastrich attached.

Music: Casual by Liquify. Licensed from Artlist. See attached PDF: Casual\_License\_719099 - 2020-2021.pdf

**Script:**

The laboratory’s force balance flume is used to test forces on different objects, such as a bridge deck section, that are used in highway infrastructure. A robotic arm is used to generate waves or hold sensors for force and velocity measurements. A 3-axis force sensor mounted to a stabilized force balance tower is used to measure hydrodynamic forces. The measured hydrodynamics forces can also be used to calibrate CFD models.

**508 Caption Description:**

The video starts with a camera panning around the Force Balance Tower section of the flume. The video scales down in size and moves to the upper right corner of the screen, then a second video on the left side shows a technician entering commands into a remote to control the robotic arm. The arm mount of the robot pivots so it is centered over the flume channel and lowers into test section. Back in the original video the robotic arm is shown creating a wave in the channel section by pushing a plastic paddle against the water. A new video appears on the left side of the screen that shows the cross-section of a bridge deck superstructure model with girders mounted from above suspended over the water. A wave crashes into the bridge deck model, completely submerging it for a brief moment. The video on the left scrolls off the screen and a new video appears showing a dolos model attached to a sensor being lowered into the water in the test channel section.