

QUARTERLY PROGRESS REPORT

January, 1 2010 to March, 31 2010

No additional funding was received for the project in this reporting period. The total funding received for the TPF-5(164) study so far is \$195,000.

In this reporting period no measurements were performed in the culvert flume because of the ongoing construction to add a tilting mechanism to the culvert flume (Figure 1). A specially designed screw-jack system with a drive shaft that is connected to 2 screw-jacks will lift up the culvert flume at the upstream end. The tilting mechanism of the culvert flume is designed to achieve a slope of 4%. The culvert flume is mounted on a ridged frame to minimize deflections. Figure 2 shows the pivot point of the culvert flume. A control logic including screw-jack, pump, flow-meter and flow-depth meters will be programmed to change the non-uniform flow regime into a uniform flow regime by tilting the culvert flume. The construction of the flume will be completed in June.

The Transportation Research Analysis and Computing Center (TRACC) at the Argonne National Laboratory continued performing computer modeling for the study. The current status of the high performance Computational Fluid Dynamics (CFD) modeling for the fish passage study is presented in the TRACC-CFD quarterly progress report.

In the period from 01-01-10 to 03-31-10 no TPF funds were spent.



Figure 1: Ongoing construction to add a tilting mechanism to the culvert flume.



Figure 2: Pivot point of the culvert flume