

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): FHWA

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

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|---|--|---|
| Transportation Pooled Fund Program Project # TPF-5(164) | Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) 2012 <input type="checkbox"/> Quarter 2 (April 1 – June 30) 2012 <input type="checkbox"/> Quarter 3 (July 1 – September 30) 2012 <input checked="" type="checkbox"/> Quarter 4 (October 1 – December 31) 2012 | |
| Project Title: <i>Fish Passage in Large Culverts with Low Flows</i> | | |
| Name of Project Manager(s): <i>Kornel Kerenyi</i> | Phone Number: <i>(202) 493-3142</i> | E-Mail <i>kornel.kerenyi@fhwa.dot.gov</i> |
| Lead Agency Project ID: | Other Project ID (i.e., contract #): | Project Start Date: |
| Original Project End Date: | Current Project End Date: | Number of Extensions: |

Project schedule status:

On schedule
 On revised schedule

 Ahead of schedule

 Behind schedule

Overall Project Statistics:

| Total Project Budget | Total Cost to Date for Project | Percentage of Work Completed to Date |
|----------------------|--------------------------------|--------------------------------------|
| | | |

Quarterly Project Statistics:

| Total Project Expenses and Percentage This Quarter | Total Amount of Funds Expended This Quarter | Total Percentage of Time Used to Date |
|--|---|---------------------------------------|
| | | |

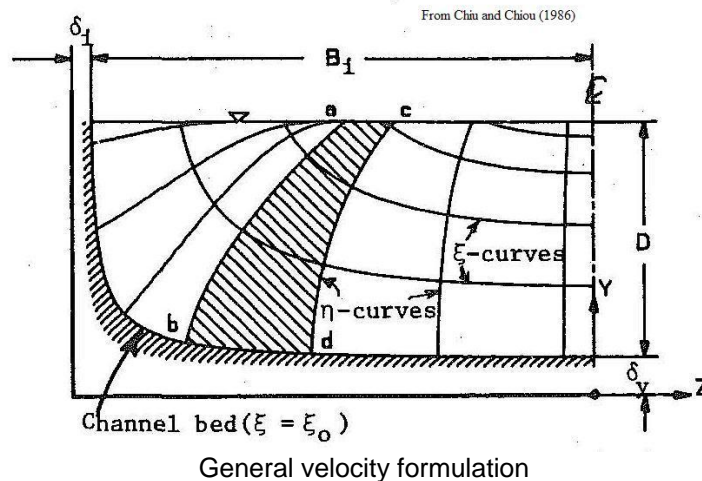
Project Description:

A primary objective of this aspect of the fish passage study is to determine the local velocities and flow distributions in corrugated metal pipes and pipe arches. This information is proposed for use to supplement the guidance in the publication FHWA- NHI 01-020 Hydraulic Design of Highway Culverts, Hydraulic Design Series No. 5. Conventional open-channel culvert hydraulics provides the tools and software needed to compute the average velocity of flow at any culvert cross-section for higher flows, given the culvert shape, roughness, slope and boundary conditions. In order to more accurately evaluate the ability of fish to traverse corrugated metal culverts, it is desirable to look at the changes in the local average velocity of the flow adjacent to the culvert wall under low flow conditions. Other studies have documented the tendency of fish to seek out a swimming location with the lowest velocity of flow. The location of lowest velocity can generally be found immediately adjacent to the culvert wall.

The specific objectives of this task order are to develop local average velocity design charts for various hydraulic conditions in support of the "Fish Passage in large Culverts for low Flows" study, which will be incorporated into the FHWA publication HEC-26 "Culvert Design for Aquatic Organism Passage".

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

- Potential recommendations for design procedure were considered. The findings were put into a more general format to be used for a broader range of fish passage culvert design or validation.
- Draft report was produced and preliminary review completed. Revision was recommended.



Anticipated work next quarter:

- Reviewing and competing the final report.

Significant Results:

Generalized formulation for velocity distribution.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

Potential Implementation:

Additional design aids that may be incorporated into FHWA HEC-26 "Culvert Design for Aquatic Organism Passage".