ODFW Toolbox:
To Help Accelerate Culvert Replacement Projects

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Purpose and Intent

The culvert toolbox is designed to assist the people replacing culverts on private land so they are able to provide the information needed to meet fish passage standards, know where to collect the data, develop diagrams with sufficient detail based on examples and follow a concise format to provide all the information needed by the regulatory agencies. The culvert toolbox is designed as a set of forms using an Excel spreadsheet. The foundation of the culvert toolbox data form is the information needed to complete an ODFW Fish Passage Plan.

The intent of the toolbox is to provide a standard of documentation that will facilitate providing the necessary information during the permit applicant's first submission and limit the delays caused by requests for additional information. By having a standard set of data and a standard format the applicant can better collect all up front information when on site and prevent delays related to going back to re-measure a stream parameter.

Background

Permits are often delayed because an application is lacking information. This can be due to a number of reasons, including information collected in the wrong location, collected but not included in the application or has been obscured when the plan diagrams are reduced to an 8 ½ X 11 inch sheet of paper.

In January 2009 the state of Oregon anticipated federal stimulus money being used to replace culverts on fish bearing streams in rural areas across the state. As a proactive measure the state looked at establishing a "Design to Yes" criteria where if you met the criteria a permit would be issued with minimal regulatory review delay. During the course of the discussions a primary reason for permitting delays was identified as the lack of information in the application necessary to conduct a proper and timely review. The US Army Corps of Engineers will not issue a permit to install or improve a step weir or to replace or improve a culvert, until the action has been reviewed and approved by NMFS for consistency with NMFS fish passage criteria under SLOPES IV for Restoration. Complicating this is the fact that the information needed by NMFS for their review can vary by project type and scale and the information standards are not readily available to the general public. This results in applications submitted to the USACE often containing too little or non-relevant information for NMFS review purposes.

Description

The foundation of the culvert toolbox data form is the information needed to complete an ODFW Fish Passage Plan. ODFW fish passage statutes must be met regardless of the

project being regulated by the Oregon Department of Forestry, Department of State Lands, and the US Army Corps of Engineers. Additional information was added to the form to allow more complex calculations to be conducted such as water velocities, sediment scour, and culvert flow.

The toolbox is designed as an Excel spreadsheet. The toolbox uses the active channel width as a baseline to allow landowners and landowner project coordinators (for example, watershed council, NRCS and SWCD staff) to measure the relevant stream features consistently whether the stream is 2 or 20 feet wide. This information can be collected during the scoping phase of a project and can be used as supporting documentation to justify additional engineering or surveying costs, obtaining preliminary culvert or bridge sizes and develop project cost estimates.

The longitudinal profile and the cross section pages may look like you need to be an engineer to input survey data, but a couple of people with a tape measure, fishing line, line bubble level, and a measuring stick can collect all the information requested and automatically generate the area calculations and graphs that depict the site.

Benefits to State and Federal Agency Staff

The advantage to the agency reviewer is that intensity of the review can be scaled to the complexity of the project by looking at primary stream indicators. The USACE can determine if there is sufficient documentation in the application prior to writing the biological assessment and sending it to the NMFS or USFWS biologist to review. The NMFS or USFWS biologist will send less applications back to the USACE for additional detail and reduce the time handling the same application. This will reduce the time the applicant is waiting for the application and result in greater customer satisfaction. The complete application will allow the biologist to compare primary indicators such as the slope of the stream and the stream bed in the culvert (passage risk), the natural pool depth to the depth the culvert is embedded (scour risk) and the culvert open area to flood prone area (flood damage risk). With this basic and consistent information, if there are concerns about the project the application can be sent to the engineers for a technical review. The information contained in the toolbox data sheet will allow an engineer multiple methods to determine if the project as proposed in the initial application meets the fish passage standards. With standardization of the format applicants and reviewers can become proficient in processing the data and the permit application.

The state can benefit from the same efficiencies of having the information presented in a consistent format when reviewing fish passage plans and DSL applications. The OWEB grant technical review team will be able review stream crossing grants in a consistent manner and identify technical challenges that a project may encounter with the proposed design.