

## **CHAPTER 1 – INTRODUCTION**

The Office of Federal Lands Highway (FLH) is part of the US Department of Transportation (USDOT) Federal Highway Administration (FHWA), and works in cooperation with federal land management agencies to plan, design, construct and rehabilitate highways and bridges on federally owned lands. In support of this mission, FLH has developed these project-level guidelines for assessing the condition and performance of existing roadway culverts, and when necessary, selecting corrective actions to be taken for any deficiencies found as part of specific project development activities. This procedures manual is intended to aid users in implementing a fully integrated culvert assessment and decision-making tool that provides guidance for selecting replacement or rehabilitation alternatives.

These guidelines have been prepared for use by FLH engineers and field technicians performing culvert assessments in support of project-level design activities. The full range of environmental regions and structural types that are encompassed by the various FLH divisions across the country are accommodated by the procedure. The modular “toolset” approach to organization of this procedure is intended to efficiently facilitate assessors possessing a potentially wide range of background, training and experience. The core of the procedure offers the minimum necessary tools, including assessment forms, rating guide and decision-making charts, for an engineer-inspector to conduct culvert assessments and make follow-up recommendations quickly and effectively. For those assessors seeking further guidance, modularized content and tools, such as the photographic rating guide or in-depth narrative, can be “grabbed from the shelf” and taken into the field similar to physical inspection tools.

The content, recommendations and examples provided in this manual are the result of the direct and indirect contribution of many years of combined experience in culvert design and evaluation by multiple agencies and industry consultants. Formulation of the procedure was also influenced by the existing work of others in the realm of culvert assessment and rehabilitation, as researched in the extensive literature review phase of its development. Case-study examples included in this manual are a few common scenarios encountered by FLH assessors during an actual culvert investigation effort, and are by no means exhaustive. Future content additions and modifications by FLH are anticipated through further use and evaluation of the procedure.

Although these guidelines are intended for project-level rather than programmatic or inventory-level use (i.e. planning and future budgeting), their development was influenced by existing work and industry practices in the field of culvert inventory and management. Inventory-level use was not a goal in the creation of this manual; however, the manual and its component tools do easily lend themselves to programmatic applications and should function well as a basis for future culvert asset management development efforts by FLH and other users.

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