CULVERT MAINTENANCE

Concrete Culvert Overview Flowchart
Structural Defects Flowchart (Concrete)
Bedding Deficiencies Flowchart (Concrete)
Hydraulic Capacity Flowchart (Concrete)

1. SUMMARY

Maintenance of culverts can be divided into routine, preventive and emergency maintenance. Ballinger and Drake (1995) outlined benefits of regular and preventive maintenance, discussed costs and legal implications to doing or not-doing maintenance work in a timely manner. Work options of these maintenance strategies are outlined in Table 1.

Table 1: Work options for culvert maintenance strategies (after Ballinger and Drake 1995, and Wyant, 2002)

Strategy	Objective	Work options
Routine Maintenance	To keep a culvert in a uniform and safe condition by repairing specific defects as they occur.	Debris and sediment removal Thawing frozen culverts
Preventive Maintenance	Takes maximum advantage of the remaining unusable structure in a culvert to build a reconditioned culvert.	Joint Sealing Concrete patching Mortar repair Invert paving Scour prevention Ditch cleaning and repair

FHWA's computer-based Culvert Management System (FHWA, 2001) is an automated tool to facilitate the coordination of culvert maintenance and replacement operations on a system wide basis. The software enables agencies to create an inventory of their culverts, assess them, and schedule repairs and replacements. It also helps agencies to develop maintenance plans and to estimate costs for installing, repairing, or replacing culverts (Schans, 2004).

2. REFERENCES

Ballinger, C.A., and P.G. Drake, 1995. *Culvert Repair Practices Manual*, Vol. 1 & Vol. 2 (Appendices), FHWA-RD-95-089, May 1995, US Department of Transportation, Federal Highway Administration (FHWA), McLean, VA, 330p & 321p

FHWA, 2001. *Culvert Management System - Users Manual*, Report No. FHWA-LT-02-001, Oct 2001, 105p

Schans, J., 2004. "New Software Helps Agencies Track Culvert Maintenance," *Research and Technology Transporter*, Feb 2004 (24959.doc)

Wyant, D.C., 2002. *Assessment and Rehabilitation of Existing Culverts*, Synthesis 303, Sep 2002, National Cooperative Highway Research Program (NCHRP), Transportation Research Board (TRB), Washington, D.C., 82p.

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