

1. Report No. NDSU 01-01	2. Report Date 2003	3. Contract No.	4. Project No.
5. Title and Subtitle Cost Effective Non-Flammable Pipe Liners		6. Report Type Click on link to open report Work Plan <input type="checkbox"/> Construction <input type="checkbox"/> Evaluation <input type="checkbox"/> <u>Final</u> <input checked="" type="checkbox"/>	7. Project No. 8. Project No. 9. Project No. 10. Project No.
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14. Supplementary Notes			
15. Abstract <u>Purpose and Need</u> The North Dakota Department of Transportation uses corrugated metal pipe for carrying storm water beneath roads and highways. The corrugated metal pipes corrode over time requiring rehabilitation using liners. Liners are primarily made up of polyethylene (PE). These liners are cost effective and meet structural and hydraulic properties. But, PE pipe is highly flammable. The NDDOT has had numerous liners damaged from ditch fires. A solution needs to be found. <u>Objective</u> The objective of this research was to investigate potential mitigation methods to minimize fire risk to liners. <u>Scope</u> The study focused on non flammable coatings on existing PE liners or on other pipes, concrete end caps, and new liner materials with or without non flammable coatings. <u>Summary</u> Many coatings and paints were investigated for use as a non flammable coating for liners. Products investigated were Ceramic Adhesives, Polyurethane coatings, Elastomeric Coatings, Resin pipes, Hobas fiberglass pipes and end caps. There are coatings that are non flammable but, their use is limited as adhesion to PE liners is not good. The following recommendations are proposed: 1. Use existing HDPE liners with concrete end caps 2. Use of Hobas pipe without inner layer 3. Hobas pipe with inner layer and coated with marine fabric. A cost comparison of the material costs was done for the various recommendations. Since the installation costs are greatly dependent on the exact sizes of the projects, it is estimated that the installation costs would be quite similar for the different routes proposed.			
16. Key Words Drainage Pipes Plastic Liners	17. Distribution Statement No restrictions. This document is available to the public from: Dept. of Civil Engineering and Construction College of Engineering and Architecture North Dakota State University Fargo, ND 58105 Tel. (701)231-7244 Or North Dakota Department of Transportation Materials and Research Division: 300 Airport Road Bismarck ND 58504-6005 Office: (701) 328-6900 Fax: (701) 328 -0310		18. No. of Pages 52 19. File type/Size PDF/ 1.7 mb