

Virginia Tech Condition Assessment Selection Tool VT-CAST

ABSTRACT:

The objective of this research is to develop a framework for the effective selection of condition assessment technologies for water and wastewater utilities. A Microsoft-Excel based framework is developed to help the utility managers in selecting condition assessment technologies for their water and wastewater pipeline assets. The tool selection approach uses a multi-step exclusion protocol in which the tools are excluded on the basis of their applicability relating to technical feasibility and technical suitability for a particular situation. Usable tools are then compared against a performance and cost database to determine performance and cost in a given project/ utility condition. This research provides a brief description and review of 24 non-destructive commercialized condition assessment technologies, including the principal and implementation considerations. A framework for decision system tool was developed to facilitate utilities in selecting appropriate condition assessment technologies. This framework could facilitate the selection of usable technologies by excluding the options, which are not technically feasible and suitable. The user can then further explore the usable tools and determine the most suitable technologies for their assets. A program is developed as a part of this project, Condition Assessment Selection Tool (CAST), which consists of performance and economic database, a graphical user interface to facilitate user input, and the results of the comparison of each usable technology in the database to the project information provided by the user for their assets. The results are presented as performance indices and economic indices indicating the performance and technology cost of usable technologies. A data reliability index was also developed to provide a scale for comparing the reliability of the existing data in the database.

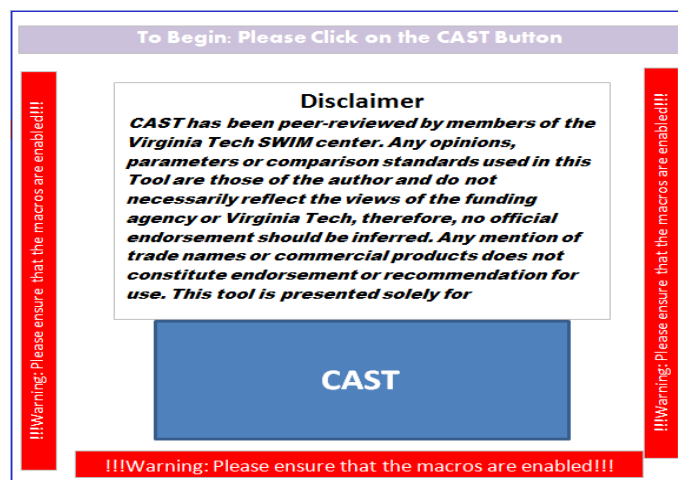


Figure 1: Graphical User Interface for CAST Tool

CONTACT:

Dr. Sunil Sinha; Email: ssinha@vt.edu; Phone: 540-231-9420