APPLICATION OF GROUND PENETRATING RADAR (GPR) IN BRIDGE CONDITION ASSESSMENT

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Abstract- Recently great deal of attention to bridge condition assessment due to having tragic failure in the past that lead to life and economic loss has become significant. Inspection of concrete bridge deck is an important part of bridge condition assessment process. Conventional techniques for bridges deck condition assessment are not only time consuming and full of human errors, but also cause to traffic flow. Development of Non Destructive Evaluation (NDE) technique has greatly mitigated the deficiencies of traditional techniques. Bridge deck is the main component of bridge which may lead to delamination or deterioration due to having shorter service life compared to other elements, therefore condition assessment of concrete bridge deck is completely inevitable and critical task in bridge management system leading to economic management. For timely rehabilitation and maintenance of bridges, detailed information about the present condition as well as the history condition of bridges is completely essential. During providing information about condition of a bridge, traffic flaw will be increased causing to obstruction. For preventing or minimizing this problem, NDE methods have been utilized for obtaining detailed information about the condition of bridges. Ground Penetrating Radar (GPR) has been nowadays considered as one of best methods of NDE techniques for bridge deck condition assessment. The main objective of this study is to investigate the application of GPR system in bridge condition assessment.

Keywords- Bridge condition assessment; Bridge management system; NDE; GPR