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CRESTWOOD NEIGHBOURHOOD REHABILITATION AND UPGRADING

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ABSTRACT: Crestwood neighbourhood is one of the older neighbourhoods selected by the City of Edmonton Neighbourhood Improvement Program for rehabilitation in 2006/2007 based on an integrated approach. Crestwood neighbourhood encompasses approximately 80 hectares of area and consists of approximately 33 kilometers of sanitary and storm sewers. The rehabilitation program involves repair, renovation and replacement of defective and insufficient capacity sewer pipes.

Physical condition assessment and hydraulic modeling were carried out for this assignment. For condition assessment, the total, mean and peak scores were used to determine the five structural ratings of sewer pipes. The rehabilitation program only considers rehabilitation for sewer pipes with a structural rating of four and five. The remaining sewer pipes will be scheduled for future assessment by CCTV inspection. For hydraulic upgrading, the theoretical load and hydraulic grade line factors were used to determine the five hydraulic condition ratings. The City of Edmonton's unique assessment systems and prioritization method will be discussed.

Various rehabilitation methods for spot, partial and full relines of sewer pipes were investigated. The selection of the preferred rehabilitation method was based on a cost analysis. The paper will discuss the design of the lining based on the type of defect and ovality of sewer pipes.

For hydraulic upgrading sewer pipes, construction methods including open cut, horizontal direction drilling and pipe bursting were considered. The preferred method was selected based on the cost effectiveness and special condition of each sewer pipe.