City Wide Flood Mitigation Assessment Phase I

City of Edmonton

Location

Edmonton, AB

Client Contact

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City Project Management Committee

Key Team Members

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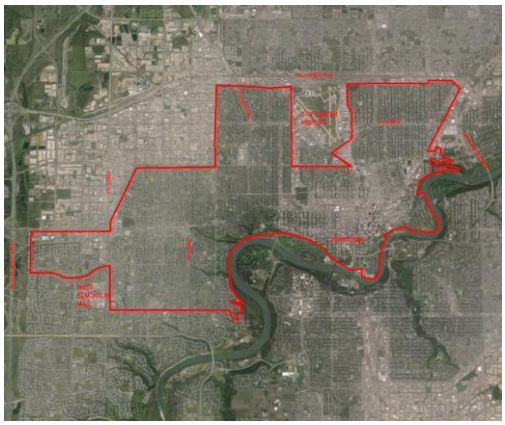
The City of Edmonton has a unique growth history. It is one of the oldest cities in the Province of Alberta, it's growth involved both increases population at the original core and, from the amalgamation of many satellite communities. The City has also been innovative in adopting new engineering and construction standards in an effort to better service the growing population.



City Wide Flood Mitigation Phase 1 Area

In 2014, City Council approved a major initiative to evaluate the drainage system of the entire City in an effort to identify necessary infrastructure upgrades such that all areas of the City would have adequate drainage and flood protection. The scope of the study will include the analysis of both the major (street and overland) drainage system and, the minor (underground piping) system in a hydraulically coupled fashion. This initiative is pro-active and requires "out of the box" approach to system analysis and solution development.

Sameng was retained by the City to undertake the study of the Phase 1 area. This area includes the oldest part of the City which is downtown. It spans over 44 neghbourhoods and involves both separated (storm and sanitary) and combined drainage systems. The Phase 1 study is thought to be the most complex of the 5 study areas and will be used to establish the analysis methodology. The Sameng team has substantially completed the Phase 1 work with the following major achievements:

1. The computer model representing the study area comprised of over 25,000 pipe segments and close to 10,000 street segments. Sameng constructed these major components of the project model using Mike Urban, tested the individual components for reliability and accuracy, and assembled an integrated overall study area model.
2. The project team accurately charaterised the major and minor system interactions and therefore the system deficiencies. This allowed the quantification of both street and pipe related flood risks (from storm and sanitary sources).
3. Upgrade options have been developed that include; new trunk sewers at strategic locations to increase the overall capacity of the pipe network, storm pond retrofits in established neighbourhoods to improve their level of flood protection, overland flow improvements, various methods to improve the water quality, partial separation of the storm drains in the combined sewer areas, and locations for new storm outfalls.