Municipal Infrastructure Engineering

Stormwater Master Plan Development

Sturgeon Valley Utility Servicing Update: Stormwater

Sturgeon County

Location

Sturgeon Valley, AB

Key Team Members

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Duration

2008-2013

The Sturgeon Valley is located in the south-central region of Sturgeon County and encompasses 5,880 ha of both country residential and agricultural land. The existing stormwater system consists of drainage ditches, swales, culverts, sewer pipes and a few stormwater management facilities.

Sameng was retained in 2008 to complete the Sturgeon Valley Servicing Update and then again in 2011 with the Sturgeon Valley Preliminary Stormwater Analysis. In 2012-13, Sameng was retained to add onto and update the stormwater management study, which key objectives are to:

1. Delineate the entire Valley's existing drainage basins,
2. Identify and analyze the existing stormwater infrastructure, including culverts, outfalls and drainage channels for the entire Sturgeon County Study Area,
3. Develop a stormwater management plan for the undeveloped land along the west boundary of the Valley, adjacent to the City of St. Albert, and on the north side of the City of Edmonton,
4. Recommend a stormwater levy and provide detailed cost estimates, and
5. Identify phasing options.

Sameng created a stormwater management plan using available design standards and existing topography and drainage patterns. Sameng proposed drainage basins that are based on natural contours and land ownership, each sub basin with its own stormwater management facility or another storm sewer system.

An important aspect of the study was focused on the removal of sediments before discharge into the Sturgeon River. In order to achieve this Sameng recommended that oil/grit separators were to be installed, stormwater management wet ponds or wetlands are required for new development areas, and that ponds are designed to limit outflow at 2.5L/ha for sufficient storage during 100yr 24 hour rainfall events.