

Project Name:	99 Street Retaining Wall	Client:	Town of Peace River
Location:	Peace River, AB	Type:	Retaining Wall
Consulting:	~\$500,000	Project Budget:	~\$4,500,000



An active slope failure had regressed towards an occupied condominium building at 99 Street within Peace River, AB, and posed significant risk in damaging the condominium building and associated infrastructure. Near the toe of the slope, a local business building was also at risk. The slope failure had caused an existing gabion basket retaining wall to slide approximately 1 m. Underground utilities were damaged and 99 Street showed visible cracking and damage. ParklandGEO was commissioned to perform a geotechnical investigation, slope stability analysis and provide remedial recommendations to stabilize the slope.

The 30 m high slope was characterized by a landslide featuring a large slope failure. The failure was largely controlled by saturated conditions combined with a high plastic clay, which was found to have very low residual friction angles. The natural slope along 99 Street has been subject to minor slope movements over the past 15 years, with a failure on the east side of 99 Street at the existing condominium development requiring a gabion basket retaining wall to stabilize the slide. This landslide was observed in 2016 on the slope below 99 Street and caused significant concerns of potential damage to the existing condominium.

ParklandGEO was responsible for creating a retaining wall design, creating tender documents, reviewing bids and awarding the project to a contractor. An secant pile wall with tensioned soil anchors was recommended to stabilize 99 Street and the condominium building and a cantilever secant pile wall was recommended near the toe of the slope to protect the lower property.

During construction, ParklandGEO was responsible for materials testing, instrumentation monitoring, construction supervision, and contract management. Instrumentation installed and monitored by ParklandGEO included slope inclinometers, tiltmeters and thermal imaging profile instrumentation. Other instrumentation installed and monitored on the project included strain gauges and load cells.