



November 2017

UPDATE FOR REALTORS: BOW RIDGE NEIGHBOURHOOD (COCHRANE)

Background

The Town of Cochrane has been reviewing issues and concerns regarding two gabion walls in the Bow Ridge Phase 3 subdivision (between Bow Ridge Drive and Bow Ridge Link, and above Bow Ridge Link; see attached map).

The Town retained Stantec Engineering to investigate the cause of the movement. Stantec presented a report to the Town and property owners and recommended a total replacement of the wall to prevent possible future failure.

The gabion walls themselves are private property, but there is also Town infrastructure present (a drainage swale on top of the wall) to divert runoff. For the swale to operate as designed, the walls must be repaired or replaced.

Current status

The Town's ultimate goal is to facilitate solutions to fully repair or replace the walls so that risk to property and people is eliminated.

The Town developed strategies to address the walls' current state and interim solutions:

1. If necessary, take emergency action to protect persons and property.
2. Inspections were conducted of all properties involved and property owners were required to make repairs identified to minimize the risk of further movement of the gabion wall.
3. The Town has commenced legal proceedings with respect to the design and construction of the wall.
4. The Town, via engineering consultants, has continued to monitor the walls to attempt to identify any further significant changes.
5. The Town has permanently closed one public staircase, and has taken measures to repair and re-brace a second public staircase. The Town continues to monitor the open staircase to ensure continued safety.

For more information

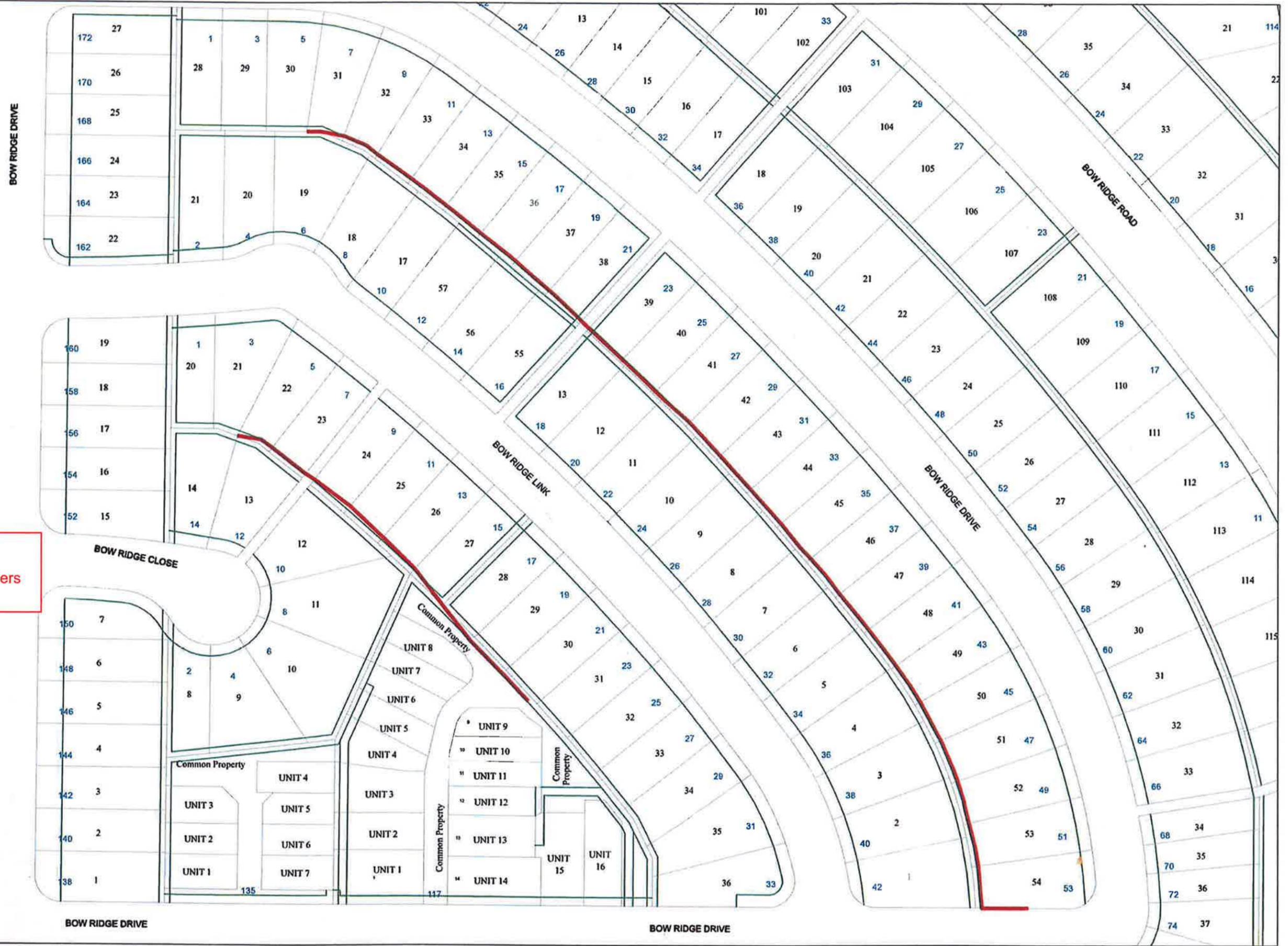
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Blue #s: Municipal Address
Black #s: Lot Numbers

— Retaining Wall
— Legal Easement
□ Lot Lines



TOWN OF COCHRANE BACKGROUNDER



November 2017

BOW RIDGE GABION WALL — HISTORY SYNOPSIS

The Bow Ridge Subdivision was constructed in or about 1999-2000. Austech Group (Austech) was the developer of the subdivision. The Austech Group appears to have been comprised at the time of at least four related companies: Austech Holdings Ltd., Austech Consulting Ltd., Bow Ridge Investments Ltd. and Bow Ridge Developments Ltd. Almor Engineering Associates Ltd. (Almor Engineering) prepared the geotechnical soils reports (1996), Retaining Wall Recommendations Report (March 15, 1999) and Foundation Considerations Report (July 27, 2000). Reid Crowther & Partners Ltd. (Reid Crowther) were the consulting engineers and prepared the subdivision engineering design drawings. It appears that Whissel Contracting constructed the gabion walls.

It further appears from the documents on file that the owners of the subject lands were 641269 Alberta Ltd. and 593267 Alberta Ltd. which is consistent with the signatories of the Overland Drainage Easement and Restrictive Covenant registered against the lands in the subdivision.

Upon a review of the Town's documents and discussions with Town personnel the following has been determined:

1. Engineering recommendations, plans and specifications for the gabion wall in Bow Ridge were submitted to the Town in or about March, 1999.
2. The design plans and specifications for the gabion wall were prepared by an engineer and stamped with an engineer's stamp.
3. The Town was not required to "approve", and did not approve, the plans, specifications or engineering design for the Gabion walls. It did approve the subdivision based upon appropriate planning principles.
4. The construction of the gabion walls was solely upon private lands which, upon sale of the individual lots, passed to each individual lot owner as part of the owners respective title together with all encumbrances registered against the lands.
5. A concrete drainage swale was constructed on the top of portions of the gabion walls and was intended to collect and carry storm water from the

individual properties to the Town's storm water collection system. The concrete swale, upon completion of subdivision construction, was turned over to the Town by the developer as Town infrastructure.

6. On August 9, 2001, a Restrictive Covenant entered into by 641269 Alberta Ltd and 593267 Alberta Ltd., as Grantors, and the Town, provided for an easement and right of way respecting the concrete swale constructed on the top of the gabion walls. Subsequent owners of lots in the subdivision are bound by the Restrictive Covenant which provides, in part, that the owners are responsible for the maintenance and repair of the swale.
7. In or about 2003, after heavy rainfall, it was observed and determined that there was movement in a portion of the gabion wall.
8. Almor Engineering was of the opinion that the gabion wall failure was due to factors other than design including resident activities in not maintaining design grade, water run off issues and additional retaining wall construction on some properties. The Town retained McIntosh Lalaini as its engineers respecting the review of construction and design and repair to the gabion wall. McIntosh Lalaini were of the opinion that the wall footings were inadequate and that water behind and under the wall caused the wall movement.
9. The portion of the gabion wall exhibiting movement was repaired in 2003-2004. The Town's insurers were consulted and were of the opinion that the Town was not liable for any loss. The Town made a political decision to negotiate an agreement for the repair of the gabion wall. The cost of repair was shared by the Town, 641269 Alberta Ltd and 593267 Alberta Ltd., referred to as "Austech", and Almor Engineering.
10. In the spring of 2009, again after heavy rainfall, there was noted movement of the gabion wall at sites other than the repair site of 2003-2004.
11. Stantec Consulting Ltd. (Stantec) was retained to conduct a Geotechnical Investigation of the gabion walls and report to the Town. After investigation Stantec reported, in summary, that the design of the gabion wall was inadequate and that the fill material contributed to wall movement. Stantec recommended that the gabion walls be removed entirely and reconstructed using another alternate wall system. A preliminary estimate of cost was between six and eight million dollars.
12. Stantec continued to monitor the gabion walls for further movement. Where movement has occurred, and when necessary, the Town has taken emergency action to protect against damage to property and injury to persons. The Town has relied on its statutory authority under the Municipal Government Act to enter properties and effect a temporary repair.
13. Inspections were conducted in 2011 of all properties involved and property owners were required to make repairs identified to minimize any potential risk of causing further movement of the gabion wall.

14. The Town commenced legal proceedings in 2011 with respect to the design and construction of the wall.

This matter is now in litigation, therefore, the Town is limited as to what information it may be able to share. The Town of Cochrane's ultimate goal is to facilitate solutions to fully repair or replace the walls so that risk to property and people is eliminated.

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