Natural disasters and geological hazards in the St. John's area

Martin J. Batterson
Geological Survey of Newfoundland and Labrador, Department of Natural Resources, PO Box 8700, St. John's, NL, A1B 4J6.

St. John's has the dubious distinction of being one of the most dangerous of Canadian cities in terms of natural hazards. A combination of terrain, extreme weather events, and unfortunate location of buildings have proven to be a poor mix, and at least 8 people have been killed in 4 separate incidents in The Battery and along Southside Road over the last 80 years or so. Construction of the Harbour Arterial above Southside Road in the early 1970s, and installation of protective fences above The Battery in 1998, have significantly reduced the risk from hazard in these areas.

The Battery is located under the slopes of Signal Hill on the north side of The Narrows. Originally established as a fishing community, The Battery has suffered at least 3 major and several minor avalanches. These were the result of snow loading the overlying slopes and the development of a cornice that eventually fails, a rapid fall in temperature followed by a heavy snowfall, a period of freezing rain followed by snow or a combination. The earliest recorded avalanche was in 1921, which destroyed several houses and seriously damaged fishing stages and flakes, and although there were injuries there was no loss of life. In the same year however, Albert Delahunty was killed in an avalanche during a snow storm on his way to work. The most serious incident was during a severe winter storm in 1959 when 5 residents were killed in their homes by an avalanche. Further incidents in 1960 and 1987, coupled with a risk of rockfall, prompted the City of St. John's to erect protective fences above The Battery at a cost of about $300,000.

Southside Road runs along the base of the Southside Hills east of the Waterford River, extending from the east side of the harbour toward Bowring Park. This area has a history of flooding from the Waterford River, and landslides from the thin glacial sediments that overlie sandstone and conglomerate bedrock. Landslides in this area are triggered by heavy rainfall events, which saturate the overburden to the point of failure, following which debris flows or torrents occur. Landslides in 1912, 1934 and 1953 caused extensive property damage and evacuation of residences. However, fatalities occurred in 1936 when Theresa Bryne (aged 4) was smothered by debris from a landslide that entered her home at 207 Southside Road; and in 1948 when Maureen Windsor (aged 3) died from trauma during a landslide in her house at 387 Southside Road. The construction of the Harbour Arterial road above Southside Road has reduced the risk of subsequent landslides by directing water into culverts, although minor sediment movement has been reported as a result of construction of houses along Southside Road.

Although the risk has been reduced, the factors contributing to geological hazard remain. Public awareness and consideration of geological hazards in municipal planning decisions are

important considerations in St. John's and other municipalities in Newfoundland and Labrador, and thus warrant inclusion of these issues in the Geoscape project.