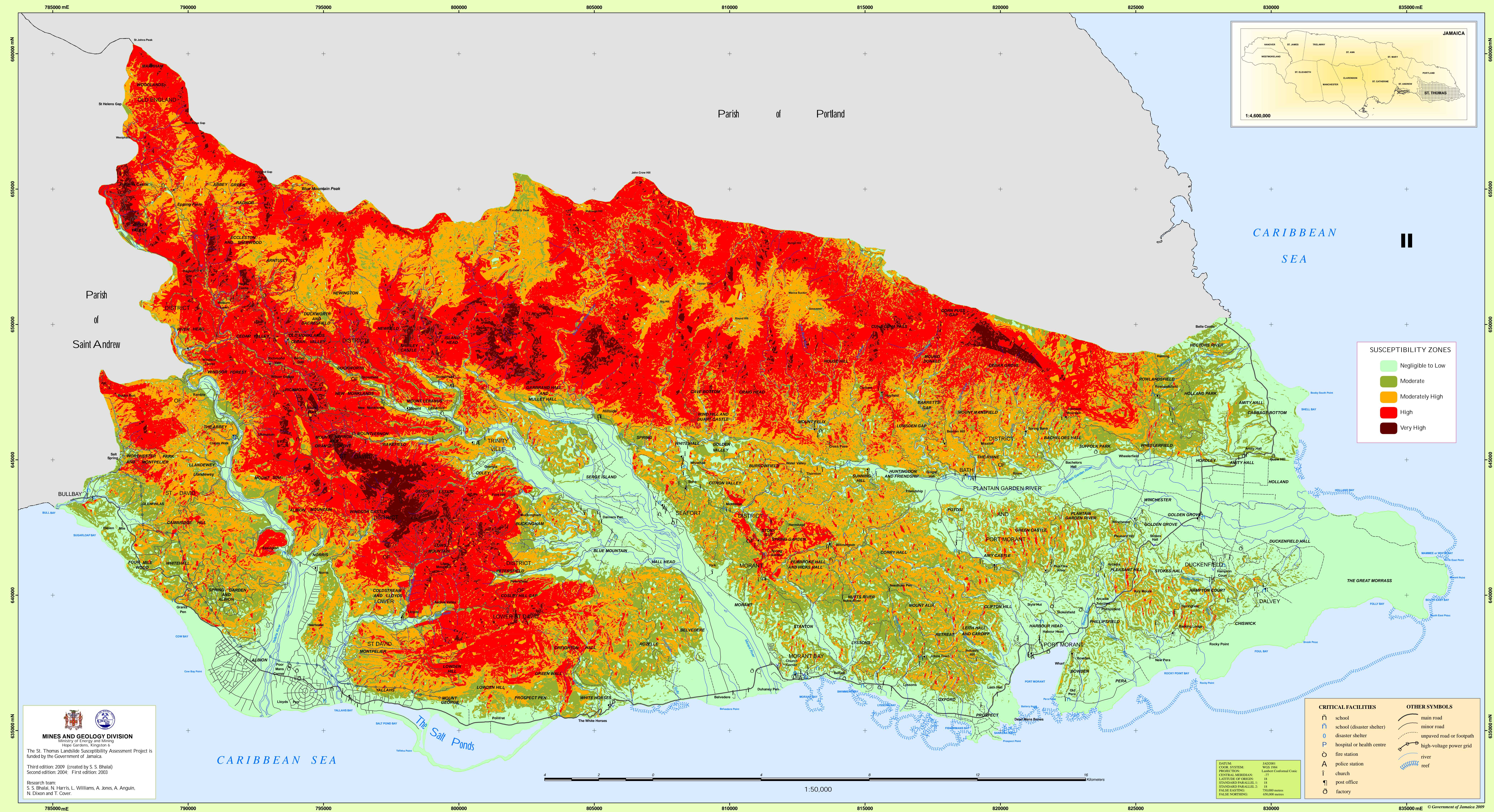


LANDSLIDE SUSCEPTIBILITY OF ST. THOMAS, JAMAICA



SUSCEPTIBILITY ZONES

- Negligible to Low
- Moderate
- Moderately High
- High
- Very High

CRITICAL FACILITIES

- school
- disaster shelter
- hospital or health centre
- fire station
- police station
- church
- post office
- factory

OTHER SYMBOLS

- main road
- minor road
- unpaved road or footpath
- high-voltage power grid
- river
- reef

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UTM SYSTEM	WGS 84
PROJECTION	Universal Transverse Mercator
CENTRAL MERIDIAN	79° 00' 00"
EASTING OF MERIDIAN	790 000
NORTHING OF MERIDIAN	1 800 000
FALSE EASTING	500 000 metres
FALSE NORTHING	625 000 metres

LANDSLIDE SUSCEPTIBILITY ZONES - GUIDELINES

NEGLECTIBLE TO LOW LANDSLIDE SUSCEPTIBILITY

Approximately twenty seven percent (27%) of the parish is classified in this zone. It encompasses those areas showing the lowest influence of the predisposing factors for landslides. The alluvial deposits on the flood plains of river valleys and those along the coastline are in this zone. The eastern and southern coastal terraces also show this level of landslide susceptibility. Landslides are almost absent in this zone except for rare river bank failure along steep-sided channels in alluvial deposits.

Where this zone is adjacent to zones of higher landslide susceptibility, the direct influence of landslides may be experienced. Landslide material originating from sources within the relatively higher zones may be deposited within this zone of negligible to low landslide susceptibility e.g. debris flow deposit coming to rest on a flood plain. Secondary effects of landslides may also be experienced in this zone. An example is flooding behind a barrier (landslide dam) created by landslide deposit that has choked a fluvial (river or stream) channel or partially blocked the flow causing a diversion of the stream.

Considering the landslide susceptibility, development should be encouraged in this zone. As pertaining to slope instability, detailed geotechnical assessment is generally not required. However, human influence can generate slope failures. Development should still proceed according to the applicable planning guidelines established for these areas.

MODERATE LANDSLIDE SUSCEPTIBILITY

Seventeen percent (17%) of the parish is classified in this zone. The predisposing factors for landslides begin to show influence. The zone is spatially distributed along the south-eastern corner of the parish and to the extreme eastern side closer to Portland parish. Small landslides (along road cuts or fluvial channels) are expected to occur at any time whereas larger landslides may occur occasionally, correlating with prolonged or intense rainfall and moderate to large earthquake events.

Large- and small-scale developments can be promoted within this zone. However, large-scale development should proceed according to geological and geotechnical advice. This is important, especially if these large-scale developments are sensitive developments. All development should consider drainage control measures (e.g. control of roof runoff from buildings and drainage ditches in fields) and simple slope stabilization measures (properly supported cuts in slopes, contour farming on slopes, etc.).

MODERATELY HIGH LANDSLIDE SUSCEPTIBILITY

Twenty four percent (24%) of the parish is classified in this zone. This zone is distributed all over the parish, but concentration occurs in western half, particularly on the extreme upper slopes of the Blue Mountain. Small landslides are dominant in this zone, but a high frequency of large landslides can be expected, correlating with prolonged or intense rainfall or moderate to large earthquake events.

Both small- and large-scale development can be facilitated in this zone but is dependent on site-specific engineering geological studies, which are highly recommended. The recommendations of the same should be strictly adhered. Sensitive developments should include a critical analysis, which includes a slope stability analysis. Suitable drainage control and slope stabilization measures are highly recommended. Drainage control includes the capture, direction and proper disposal of roof runoff from buildings on slopes. Proper and adequate road drainage should be installed during road construction. Agricultural activities, especially on clay-rich soils blanketing moderate to steep slopes, should consider a network of drainage ditches. Slope stabilization and protection in agriculture includes contour farming practices, and the use of trees with highly dense root systems to encourage soil support. For structures, deep cuts in slopes should be retained and foundations depth should be customized to penetrate sound and stable substrate.

HIGH LANDSLIDE SUSCEPTIBILITY

Twenty nine percent (29%) of the parish is classified in this zone. The central region of the western half of the parish and the upper slopes of the Blue Mountain fall within this zone. Both small and large landslides are dominant in this zone and may occur frequently, correlating with prolonged or intense rainfall and moderate to large earthquake events.

Large-scale development and major infrastructure works should be avoided. Installation of protective or stabilization works may prove uneconomical making projects unfeasible. Developments within this zone will require occasional intervention and it may prove economical to relocate when possible.

VERY HIGH LANDSLIDE SUSCEPTIBILITY

Three percent (3%) of the parish is classified in this zone. These areas show the strongest influence of the predisposing factors of landslides. Spatially, the zone occurs in patches, mainly concentrated in the central regions of the western half of the parish and on the lower slopes of the Blue Mountain range. Catastrophic landslides are possible at all times. Development is strongly discouraged and where communities exist, they should be encouraged to relocate.

GENERAL NOTES

***Sensitive Development**
 Developments on which strong dependence is placed for the social and economic survival of the parish. If these become inoperable or inaccessible over a period of time, there can be a negative impact of the depending sectors. These developments include electrical power plants, electrical and cellular communication transmission towers, major arterial roads connecting large population centres, water supply mains and pump stations, etc.

METHODOLOGY
 This landslide susceptibility model was derived using bivariate statistical methods facilitated by GIS-based algorithms. Susceptibility is the resulting comparison of the spatial coverage of landslides with geology (lithology), elevation, slope gradient and slope aspect. Susceptibility zones are not an indication of the specific size or type of landslide, the distance it may travel, nor the time of occurrence.

CONDITIONS OF USE
 The landslide susceptibility map should be used as a guide, providing the user with an understanding of the potential for landslide occurrence. It does not indicate a time component or the specific size and type. It should not be used for site specific purposes. However, it is recommended that site-specific engineering geological advice should be sought in the Moderate to Very High susceptibility classes.

RECOMMENDED CITATION
 Mines and Geology Division, 2009, Landslide Susceptibility of St. Thomas, Jamaica, 3rd Edition, Ministry of Energy and Mining, Jamaica, scale 1:50,000.

Copies of this map may be obtained from the Mines and Geology Division