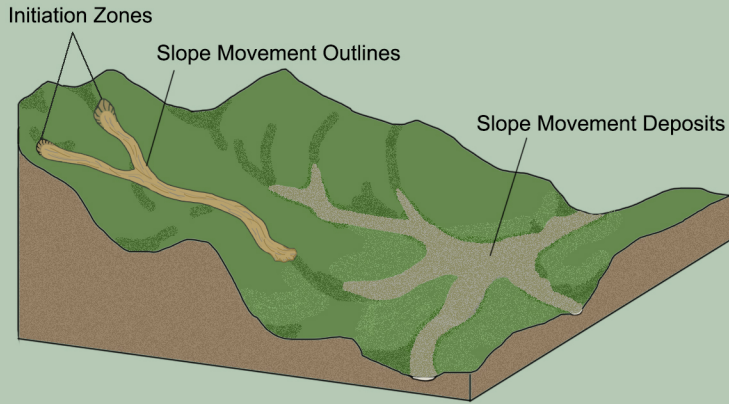


How to Use Landslide Hazard Maps

① Landslide Inventory Map → WHERE HAVE LANDSLIDES OCCURRED?

This map (also called the *Slope Movements and Slope Movement Deposits* map) identifies landslide features within the study area including:

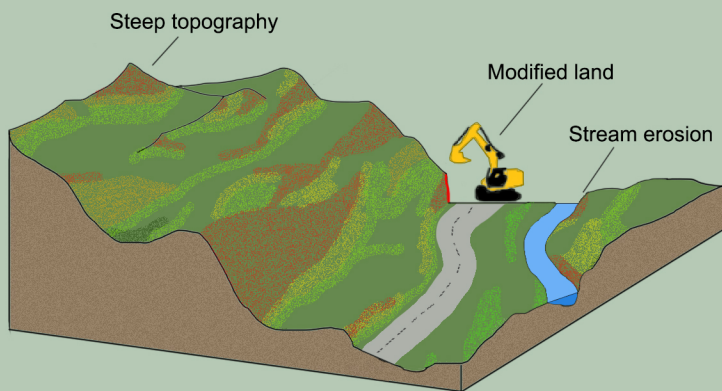


INITIATION ZONES are places where modern landslides start before sliding or flowing downhill.

SLOPE MOVEMENT OUTLINES are the boundaries of recent landslides. There are many different types of landslides, but most of these landslide outlines will identify *debris flows*.

SLOPE MOVEMENT DEPOSITS are large volumes of clay, silt, sand, and rocks that have accumulated over time as a result of multiple ancient landslide events.

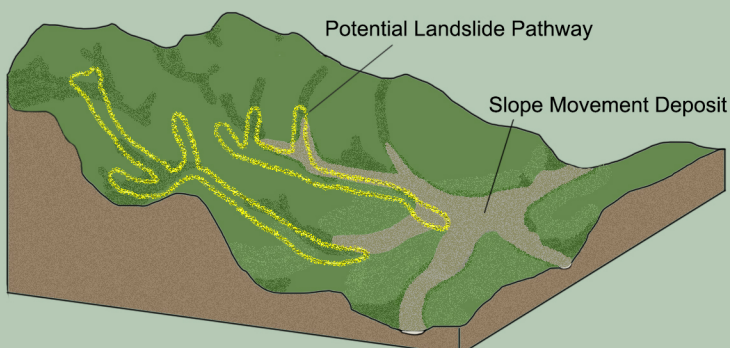
② Landslide Susceptibility Map → WHERE COULD LANDSLIDES START?



These maps identify areas that may be at greater risk of failure during an extreme rainfall event (such as a hurricane). Susceptibility maps typically highlight areas of steepest topography, in addition to other factors that influence where a landslide may initiate. Soil thickness and type, geology, bedrock fracturing, and vegetation can all be significant factors.

Slopes are more susceptible to failure in areas affected by clearcutting, burning, stream erosion, or site development. Such activities may cause reduction of soil cohesion or the oversteepening of slopes resulting in a greater risk of failure.

③ Landslide Pathway Map → WHERE COULD LANDSLIDES GO?



These maps identify the potential pathways a landslide could take if one were to occur during an extreme rainfall event. Landslides typically follow a path of least resistance downhill, such as a valley or drainage. Once a landslide encounters shallow topography, such as a flood plain, the material can spread outward covering a broader area.

What Should a Property Owner Do?

step
1

Begin with the
Landslide Inventory Map
(Slope Movements and Slope Movement Deposits Map)

Is there a Landslide Feature
on your property?

YES

NO

What kind of feature is it?

There are no *known* landslides in your area, however, new landslides could occur. Go to step 2 (page 3) to view the **LANDSLIDE SUSCEPTIBILITY MAP**.

**SLOPE
MOVEMENT
DEPOSIT**

Slope Movement Deposits are in your area of interest. These are large volumes of clay, silt, sand, and rocks that have accumulated over time as a result of multiple ancient landslides.

Be cautious when building in deposits, as they are composed of material that can become unstable when disturbed. Refer to step 2 (page 3) and the **LANDSLIDE SUSCEPTIBILITY MAP** to see if there is modern landslide potential in this area.

**INITIATION
ZONE**

An **Initiation Zone** is in your area of interest. This is the initiation zone where a documented modern landslide began before sliding or flowing downhill.

If you plan to build in this area, it is a good idea to **contact a qualified geotechnical engineer** or geologist. Refer to step 2 (page 3) and the **LANDSLIDE SUSCEPTIBILITY MAP** to see if there is potential for future landslides to occur in this area.

**SLOPE
MOVEMENT
OUTLINE**

A **Slope Movement Outline** has been identified in your area of interest. These are the tracks of documented modern landslides (composed of debris, earth, or weathered rock) that have flowed, slid, or fallen downhill.

If you plan to build in this area, it is a good idea to **contact a qualified geotechnical engineer** or geologist. Refer to step 2 (page 3) and the **LANDSLIDE SUSCEPTIBILITY MAP** to see if there is potential for future landslides to occur in this area.

What Should a Property Owner Do?

step
2

Look at the **Landslide Susceptibility Map**

YES

Is your area of interest in a stability zone shown as
Moderate Hazard or **High Hazard**?

NO

This area is identified as **moderate to high landslide hazard** zone where natural landslides (not due to construction) are **most likely** to occur during an extreme rainfall event. Moderate to high hazard zones are calculated using several factors: topographic slope and curvature, elevation, soil texture, and bedrock geology.

Your area of interest is in a stable zone. Even though landslides are not likely to begin in your area during a storm event, landslides could impact this area from steep slopes uphill. Even in a stable zone, a landslide may be triggered if construction or stream erosion cause **oversteepening** of an otherwise gentle slope.

Next refer to step 3 (page 4) and view the **LANDSLIDE PATHWAY MAP** for more information.

**MODERATE
HAZARD ZONE**

Your area of interest is within a **moderate landslide hazard zone**. Such areas have several contributing factors that could result in failure.

Use caution when building in these zones. Pay attention to any previously built cut or fill slopes for signs of instability such as tension cracks and slumping. Ensure stormwater runoff is effectively contained and appropriately directed. If you have concerns, **contact a qualified geotechnical engineer** to perform a **site assessment**. Refer to step 3 (page 4) and the **LANDSLIDE PATHWAY MAP** for more information.

**HIGH
HAZARD ZONE**

Your area of interest is within a **high landslide hazard zone**. Such areas have multiple contributing factors that increase the probability of instability during an extreme storm event.

Use caution when building in these zones. It may be a good idea to **contact a qualified geotechnical engineer** or geologist for a **site assessment**. If your property is within one of these zones, monitor for evidence of instability such as cracks in soil, tilted trees, sagging or taut power lines, or leaking or broken pipes. Ensure stormwater runoff is effectively contained and appropriately directed. Refer to step 3 (page 4) and the **LANDSLIDE PATHWAY MAP** for more information.

What Should a Property Owner Do?

step
3

Look at the Landslide Pathway Map

Is your area of interest
in or near:

AREAS OF PAST DEBRIS FLOW ACTIVITY

Landslides accumulated in this area during ancient times (thousands to millions of years ago). Landslides often occur in the same areas and old material from previous landslides may become reactivated if a severe storm event were to occur or if such material is disturbed by building processes.

If you plan to build in this area, it is a good idea to contact a **qualified geotechnical engineer** or geologist for an evaluation if the area is deemed to be at risk and follow safe building guidelines in order to avoid creating unsafe oversteepened slopes.

NO KNOWN DEBRIS FLOW ACTIVITY

Landslides have not been recorded in this area. It is unlikely that damage could occur here due to landslides, **however** oversteepening of otherwise stable slopes due to excavation during construction could lead to slope failure.

If you plan to build here, be sure to follow safe building guidelines in order to avoid creating unsafe oversteepened slopes.

KNOWN DEBRIS FLOW PATHWAYS

These are documented landslides that occurred during historic time. Landslides often occur in the same areas and old material from previous landslides may become reactivated if severe storms occur or if such material is disturbed by construction.

If you plan to build here, it is a good idea to contact a **qualified geotechnical engineer** or geologist and follow safe building guidelines in order to avoid creating unsafe oversteepened slopes.

POTENTIAL DEBRIS FLOW PATHWAYS

These are estimated landslide pathways that could develop if an extreme storm event were to occur in this area. The exact width and length of an actual landslide here could vary from the map estimates.

Contact a qualified geotechnical engineer or geologist if you intend to build and follow safe building guidelines in order to avoid creating unsafe oversteepened slopes. If you live near a potential landslide pathway, be mindful of weather conditions and be prepared to leave for safer ground if a severe storm event occurs in your area.

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