

CITY OF CALABASAS GENERAL PLAN:

COMMUNITY PROFILE

GEOLOGY

May 6, 1993

Appendix __ - Major Geologic Formations

Modelo Formation (Tm). This formation generally occurs in the northern portion of the study area occupying approximately 30 percent of the project area with a maximum thickness of 3,000± feet. Characteristics vary according to location and the following subunits:

Upper Shale:

- Location: Laskey Mesa (north of Calabasas) and the northern portion of Calabasas.
- Topography/Vegetation: Subdued to moderate topography; usually grass covered.
- Soils: Expansive clay soils.
- Landslides: Small landslides in western exposures.
- Construction Factors: Pavement over this formation may expand; clay bearing beds dipping out of slopes may be prone to slides.
- Seismic Factors: Relatively minimal shaking on bedrock from distant earthquakes; grading problems could occur if earth fill is present.
- Groundwater Flow/Permeability: Probably poor.

Burnt Shale, Siltstone and Very Fine Siltstone:

- Location: Between Cheseboro and Palo Camado Canyons.
- Topography/Vegetation: Resistant to erosion and usually sparsely grass covered.
- Soils: Thin, fragmented soils.
- Landslides: Prominent landslides on east side of Las Virgenes Canyon.
- Construction Factors: Very low density, porous rock.
- Seismic Factors: Potential for seismic response similar to other shale, siltstone and fine sandstone.
- Groundwater Flow/Permeability: Porous, but with unknown permeability potential.

Upper and Lower Sandstone:

- Location: Central and northern Calabasas.
- Topography/Vegetation: Commonly comprises rocky slopes which may be resistant to erosion; thin brush or grass due to rocky character.
- Soils: Very thin sandy soils or no soils.
- Landsliding/Erosion: Very minor landsliding; steep slopes may be subject to debris flows during heavy rains.
- Construction Factors: Probably difficult to grade with tractor unless weathered.
- Seismic Factors: Solid construction base relative to seismic shaking.
- Groundwater Flow/Permeability: Probably water permeable along bedding planes and at surface rock fractures.

Topanga Formation (undifferentiated) (Tt). The Topanga Formation is located in the middle and southern portions of the study area, occupying approximately 40 percent of the project area with a maximum thickness of 2,000 to 5,000 feet. Characteristics for the subunits are as follows:

Shale and Siltstone:

- Location: Small areas are contained in upper Liberty Canyon area, and in Dry Canyon.
- Topography/Vegetation: Grass covered slopes.
- Soils: Clay soils and slope wash.
- Landslides: Small slides occur throughout; cuts along Mulholland Highway may slough (i.e., collapse, slide).
- Construction Factors: Formation is easily excavated.
- Seismic Factors: Relatively minimal shaking on bedrock from distant earthquakes; grading problems could occur if earth fill is present.
- Groundwater Flow/Permeability: Poor.

Sandstone and Siltstones:

- Location: McCoy Canyon.
- Topography/Vegetation: Low rounded hills with grass and sparse brush.
- Soils: Clay-bearing sandy soils and slopewash.
- Landslides: Grading cuts may slough (i.e., collapse, slide).
- Construction Factors: Clay-bearing layers may cause excavation/foundation problems.
- Seismic Factors: Seismic shaking from distant strong earthquakes probably minimal.
- Groundwater Flow/Permeability: Poor to fair.

Conglomerate, Volcanic Conglomerate, Conglomerate Sandstone:

- Location: Principally in McCoy-Dry Canyons.
- Topography/Vegetation: Dense chaparral usually covers the moderate to less commonly steep slopes.
- Soils: Thin bouldery soils.
- Landslides: Some possible landslides; steep slopes relatively stable.
- Construction Factors: Conglomerates resistant to erosion difficult to excavate.
- Seismic Factors: Potential for boulders to roll down slopes during moderate earthquake.
- Groundwater Flow/Permeability: Fair, unless well-cemented, then poor.

Conejo and Other Volcanics Formation (Tev). This formation is primarily located in the southern portion, as well as in the middle of the project area, totalling approximately 25 percent of the project area. Characteristics are as follows:

- **Location:** Primarily in the southern Sphere of Influence along Mulholland Highway and Cold Creek.
- **Topography/Vegetation:** Chaparral covered.
- **Soils:** Basalt dikes are usually weathered and non-resistant (i.e., subject to erosion); larger bodies mostly resistant to erosion.
- **Landslides:** Possible landslides occur throughout; debris flows during heavy rains where vegetation is thin.
- **Construction Factors:** Weathered parts yield clay; unweathered parts might be rippable only with difficulty.
- **Seismic Factors:** Seismic response has minimal effect from distant strong earthquakes.
- **Groundwater Flow/Permeability:** Very poor.

Younger Alluvium Formation (Qc). Located along the bottom of drainage courses, this formation occupies only five percent of the study area. Characteristics are as follows:

- **Location:** Widespread over canyon bottoms and valleys. Deposits are commonly thin, less than 10 to 15 feet.
- **Topography/Vegetation:** Nearly flat topography; grassy, mustard vegetation where damp.
- **Soils:** May be expansive.
- **Landslides:** Small slides may occur where cut by stream banks.
- **Construction Factors:** Potential for residential slab cracking where soils are expansive.
- **Seismic Factors:** Liquefaction may occur during severe shaking where ground water level is within 10 to 15 feet of the surface, especially if deposits are sandy silt or silty sand.
- **Groundwater Flow/Permeability:** Poor to fair.