Hazard Assessment

Geographic Information Systems (GIS) was used to determine hazard areas for the Hazard Assessment. ArcView, Spatial Analyst, and Model Builder software from Environmental Systems Research Institute (ESRI) was used to complete the assessment. Spatial Analyst, which uses raster data, was used as opposed to vector data that uses points, lines, or polygons, because it is better at representing geographic objects that are distributed over a continuous surface.

With Spatial Analyst software, three data layers were used to classify hazard areas; slope, aspect, and fuel (vegetation). Each cell within the data layers was assigned a value. The following tables show the values used for each data layer. Pages A2, A3, and A4 show the cell values for each data layer for the hazard assessment area.

Slope	Value
0 – 10%	1
11 – 20%	4
21 to 30%	7
31 – 40%	9
> 40%	10

Vegetation	Value
Light grass	1
Tree and grass	1
Heavy chaparral	10
Light brush	5
Dormant brush	10
Hardwood overstory	7
Mixed conifer	10
Mixed conifer - heavy	10
Urban fuel	1
Agricultural lands	1
Water	0
Barren/rock/other	0

Aspect	Value
Flat	1
North	1
Northeast	1
East	7
Southeast	7
South	10
Southwest	10
West	5
Northwest	5

Model Builder was then used to combine the three hazard data layers and come up with a combined value to determine high fire hazard and non-high fire hazard areas. Page A5 shows the modeling process used. Page A6 shows the final results of the hazard assessment.

The following data sources were used in the assessment:

- 30-meter Digital Elevation Model (DEM) used to generate a slope and aspect map (source - USGS 1994).
- 3 – meter Digital Elevation model (DEM) used to generate city slope and aspect (source - Santa Barbara County Santa Barbara Flood DEM).
- 30 – meter fuel map used to generate fuels map (source - California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, 1999).

Slope Map

Legend

— SB City Limit

Slope

- 0 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- >40%
- No Data

A2

Aspect Map

Legend:
- City Limit

Aspect Map2
- Flat
- North
- Northeast
- East
- Southeast
- South
- Southwest
- West
- Northwest
- No Data

N

A3

Fuels (Vegetation) Map

Legend

— SB City Limit

Fuels (vegetation)
- low
- extreme
- moderate
- high

N

A4

HAZARD ASSESSMENT MAP

East

Camino

Cielo

Hwy 154

Hwy 101

CITY OF SANTA BARBARA

Hwy 192

Hwy 101

Hwy 225

N

Legend

City Limit

Results of Hazard Assessment

Low

Moderate

High

Extreme