

City of Glendora

SB 99 Analysis White Paper Residential Emergency Evacuation Route Analysis

July 2023

Prepared by De Novo Planning Group



City of Glendora SB 99 Analysis White Paper

In coordination with its Safety Element Update (2023), the City of Glendora has prepared an analysis consistent with Senate Bill 99 to identify residential developments in high hazard zones that do not have at least two emergency evacuation routes. The analysis identified multiple residential areas of concern in the high hazard zone that warrant further study, and which are located throughout the City as identified on the attached map. The following is an explanation of the methodology used to map the evacuation routes.

DEFINITIONS & DATA SOURCES

HAZARD AREAS

High Hazard Zones are defined as areas that are located in one or more of the following pre-defined hazard zones:

1. FEMA's 100-year flood zone (NOT PRESENT)
2. California OES dam inundation area (PRESENT)
3. California Geological Survey's Potential Liquefaction Zones, mapped as part of the California Seismic Hazard Zonation Program (PRESENT)
4. California Geological Survey's Potential Landslide Zones, mapped as part of the California Seismic Hazard Zonation Program (PRESENT)
5. California Geological Survey's Alquist-Priolo Fault Hazard Zones, mapped as part of the California Seismic Hazard Zonation Program (PRESENT)
6. CAL FIRE's High and Very High Fire Hazard Severity Zones in State Responsibility Areas (NOT PRESENT)
7. CAL FIRE's Very High Fire Hazard Severity Zones in Local Responsibility Areas (PRESENT)

These high hazard zones were combined into one single "Combined Hazard Area" using ArcGIS union geoprocessing tools.

RESIDENTIAL DEVELOPMENTS

Parcel data was obtained from the Los Angeles County GIS Open Data Portal. This parcel set includes Use Type Classifications. Residential developments are defined as parcels that have a Use Type of Residential. Please note that parcels with a Land Use Code of 010V (Residential – vacant land) are excluded from the dataset as these parcels consist of undeveloped land with no residential units on them.

ACCESS TO MAJOR ARTERIALS

The Road Segments dataset from the Countywide Address Management System (CAMS) is used to identify points of exit from clusters (neighborhoods) of residential parcels. Road centerlines are divided into three main classes:

1. **Freeway or Highway** – These roads are noted as Freeway or Highway in the CAMS dataset.
2. **Arterial Road** – These roads are noted as Primary in the CAMS dataset.
3. **Secondary or Minor Road** – These roads are noted as Secondary or Minor in the CAMS dataset; these roads are generally the first roads a resident will encounter when departing their residence.

ASSUMPTIONS & METHODOLOGY

IDENTIFICATION OF RESIDENTIAL DEVELOPMENTS IN HAZARD AREAS

Using ArcGIS, Residential Developments in Hazard Areas were identified by running a location query to find parcels with the Residential Use Type and that intersect the single Combined Hazard Area.

IDENTIFICATION OF RESIDENTIAL SUBDIVISION EXIT POINTS

The goal of this analysis was to find at least two separate points of exit from residential areas in hazard zones by following a rudimentary roadway network in which vehicles move from Secondary or Minor Roads to Arterial Roads, and eventually to a Freeway or Highway. The following assumptions apply:

1. Residential Developments have immediate access to Secondary or Minor Roads but are distant from Freeways or Highways.
2. Arterials connect Secondary or Minor Roads to Freeways or Highways.
3. Residential Exit Points are the points where Secondary or Minor Roads intersect Arterials, thereby providing eventual access to a Freeway or Highway.

ANALYSIS & RESULTS

ANALYSIS

Upon visual analysis, residential parcels within the Combined Hazard Area were assigned to one of four categories:

1. Multiple Exit Points with Access to a Single Arterial
2. Multiple Exit Points with Access to Multiple Arterials
3. One Exit Point directly onto a Single Arterial
4. One Exit Point with Access to a Single Arterial

RESULTS

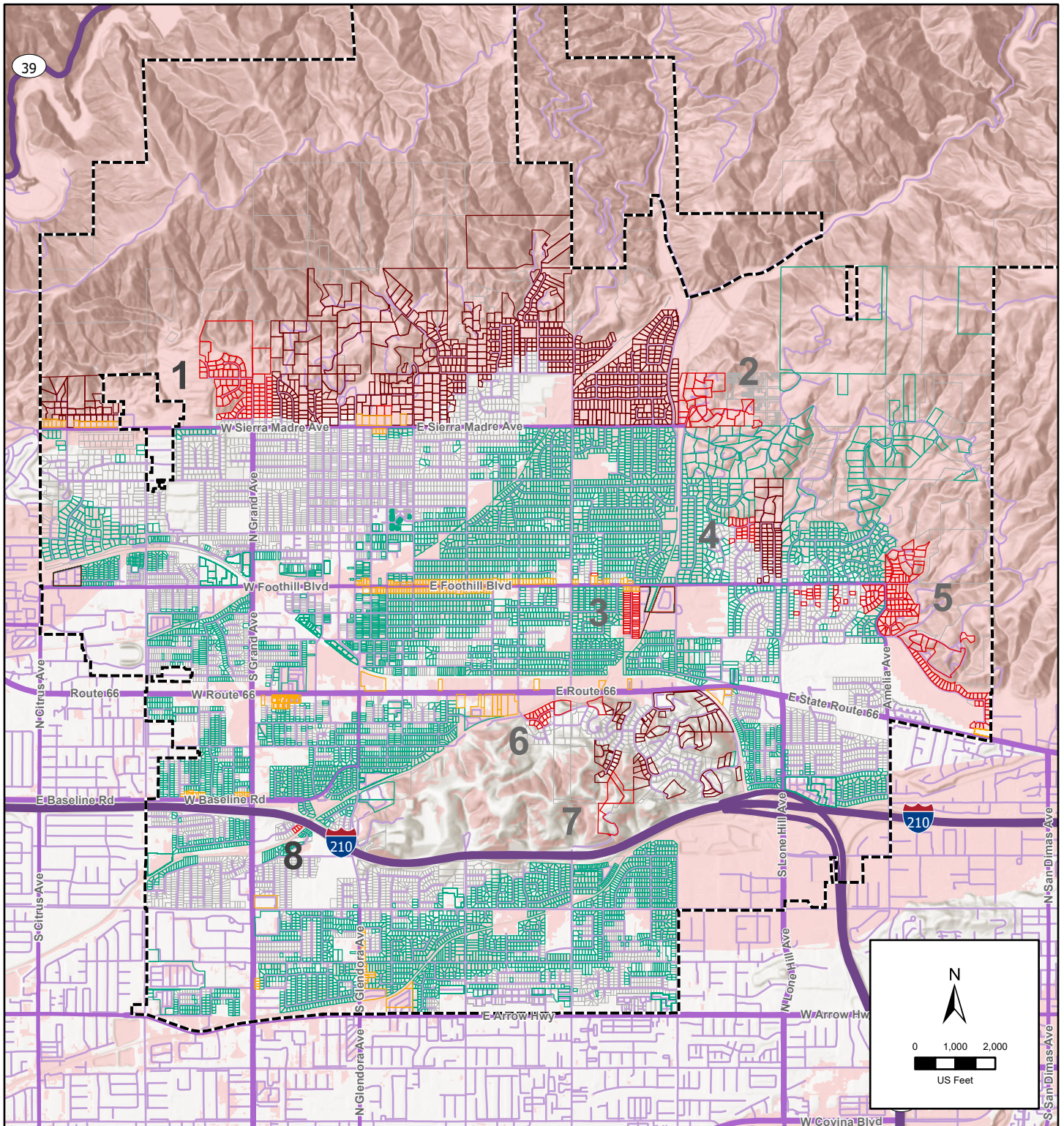
A total of 9,081 unique land parcels were identified as Residential AND within the Combined Hazard Area.

Evacuation Types	Number of Parcels
Multiple Exit Points with Access to a Single Arterial (GREEN ON THE MAP)	839
Multiple Exit Points with Access to Multiple Arterials (BROWN ON THE MAP)	7,575
One Exit Point directly onto a Single Arterial (YELLOW ON THE MAP)	321
One Exit Point with Access to a Single Arterial (RED ON THE MAP)	346
Total	9,081










CONCLUSION

The following neighborhoods should be reviewed for adequate exit strategies as they have only one exit point with access to a single arterial:

1. Neighborhood north of Sierra Madre Avenue with Grand Avenue as an exit point has 67 residential properties that singularly exit from the northern most segment of Grand Avenue. Likewise, Westridge Avenue is also within this area and it too has only one exit point for 18 residential properties.
2. Neighborhood at the eastern end of Sierra Madre Avenue with Mountain Lane as the one exit point for 25 residential properties.
3. San Jose Drive south of Foothill Boulevard is the one exit point for 38 residential properties.
4. Neighborhood north of Foothill Boulevard with Whispering Oaks Drive as an exit point for 18 residential properties.
5. Neighborhood at eastern end of Foothill Boulevard at Amelia Avenue has a number of cul de sac streets with only exit point onto an Arterial Road.
6. Neighborhood south of Route 66 with Elwood Avenue as an exit point for 15 residential properties.
7. Three residential properties in the South Hills area along Sunflower Avenue.
8. Three residential properties south of the 210 Freeway, east of Grand Avenue, with Citrus Edge Street as the only exit point.
9. Miscellaneous other residential properties with only one exit point as shown in RED on the attached map.



LEGEND

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|  Combined Hazard Areas | Residential Parcels in Hazard Areas |
|  City of Glendora |  Multiple Exit Points with Access to Multiple Arterials |
|  Freeway or Highway |  Multiple Exit Points with Access to a Single Arterial |
|  Arterial Road |  One Exit Point directly onto a Single Arterial |
|  Secondary or Minor Road |  One Exit Point with Access to a Single Arterial |

CITY OF GLENDORA

Access to Arterials from Residential Areas in High Hazard Zones

Sources: Los Angeles County GIS; CGS; CalFire; FEMA. Map date: July 6, 2023.