



CITY OF GARDENA

SB 99 ANALYSIS WHITE PAPER

Residential Emergency Evacuation Route Analysis

Appendix B to the Public Safety Element

Prepared by De Novo Planning Group – January 2022

City of Gardena SB 99 Analysis White Paper

In coordination with its focused Public Safety Element Update (2021), the City of Gardena has prepared an analysis consistent with Senate Bill 99 to identify residential developments in high hazard zones (defined below) that do not have at least two emergency evacuation routes. The analysis identified two parcels in a high hazard zone that warranted further study. Upon further analysis, both parcels were determined to have access to a loop road with at least two exit points. The following is an explanation of the methodology used to map the evacuation routes and identify areas of concern.

Definitions & Data Sources

Residential Developments

Parcel data were obtained from the SCAG GIS Open Data Portal. This parcel set includes Land Use Classifications based on the City's General Plan designations (2019). Parcels with the following designations were considered Residential Developments for the purposes of this study:

- Mixed Residential
- Mixed Residential and Commercial
- Mobile Homes and Trailer Parks
- Multi-Family Residential
- Single Family Residential

High Hazard Zones

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

1. FEMA's 100-and 500-year flood zone
2. California Geological Survey's Map Sheet 58 Landslide Susceptibility classes 8, 9, or 10 (only 9 and 10 present)¹
3. California Geological Survey's Potential Liquefaction Zones and Fault Zones mapped as part of the California Seismic Hazard Zonation Program

These hazard zones were combined into the "Combined Hazard Area" using ArcGIS. There are no High and Very High Fire Threat Zones or Very High Fire Hazard Severity Zones within Gardena. The analysis also included a search for California OES dam inundation areas and potential Landslide Zones, which were not found to be present.

¹ There are 10 landslide susceptibility classes, with 1 being the lowest and 10 being the highest susceptibility to landslides.

Roadway Network Used for Evacuation

The Countywide Address Management System (CAMS) database from Los Angeles County was used to identify points of exit from residential neighborhoods. Road centerlines were divided into three main classes:

1. Freeways – The Interstate 405 located south of the city, Interstate 110 located to the east, and the State Route 91 located to the southeast which connects to West Artesia Boulevard.
2. Arterials – noted as Highways and Primary Roads in the CAMS database
3. Secondary/Minor Roads – These roads are generally the first roads a resident will encounter when departing their residence

Assumptions & Methodology

Identification of Residential Developments in High Hazard Areas

Using ArcGIS, residential developments in hazard areas were identified by a running a location query to find the parcels with residential general plan designations 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 Minor/Residential Roads to Arterials, and eventually to a Freeway. The following assumptions apply:

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

Analysis & Results

Analysis

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

1. One exit point with some distance to a single arterial
2. One exit point directly onto a single arterial
3. Multiple exit points with access to a single arterial (Loop Road)
4. Multiple exit points with access to multiple arterials

Results

351 unique land parcels were identified as residential development and within the Combined Hazard Area:

1. Of these, 334 parcels have multiple exit points with access to multiple arterials (GREEN ON THE MAP)
2. Fifteen parcels have multiple exit points with access to a single arterial (sit on a loop road). These parcels are all part of the same Multi-Family Residential area south of W Artesia Blvd and north of the Dominguez Channel, within the Artesia Corridor Specific Plan (BROWN ON THE MAP)
3. Two parcels appeared to have one exit point with access directly onto a single arterial. Upon further analysis, one of these parcels southwest of the Artesia Blvd and Normandie Ave intersection is off of a loop road with two exit points. The other parcel, the Vermont Breeze Apartments near the southwest intersection of W El Segundo Blvd and S Vermont Ave, is also off of a loop road with two exit points. (ORANGE ON THE MAP)
4. There are no parcels described as having “One Exit Point with some distance to a single arterial”

