



**CITY OF TEMECULA SB 99
ANALYSIS WHITE PAPER**

Emergency Evacuation Route Analysis

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City of Temecula SB 99 Analysis White Paper

In coordination with its focused Public Safety Element Update (2021), the City of Temecula has prepared an analysis consistent with Senate Bill 99 to identify residential developments in hazard areas that do not have at least two emergency evacuation routes. The analysis identified six residential areas in high hazard zones that warrant further study. The following is an explanation of the methodology used to map the evacuation routes and identify areas of concern.

Definitions & Data Sources

Residential Developments

General Plan Land Use data from the City of Temecula GIS Open Data Portal were used to determine the location of residential developments:

- Rural Residential
- Very Low Residential
- Low Residential
- Low-Medium Residential
- Medium Residential
- High Residential
- Hillside Residential

Hazard Areas

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

1. FEMA's 100-year flood zone
2. California OES dam inundation area
3. California Geological Survey's Map Sheet 58 Landslide Susceptibility classes 8, 9, or 10
4. California Geological Survey's Potential Liquefaction and Potential Landslide areas, mapped as part of the California Seismic Hazard Zonation Program
5. CalFire's High, Very High, and Extreme Fire Threat zones
6. CalFire's High and Very High Fire Hazard Severity Zones in State Responsibility Area
7. CalFire's Very High Fire Hazard Severity Zones in Local Responsibility Areas

These hazard zones were combined into one single "Combined Hazard Area" using ArcGIS merge and dissolve geoprocessing tools.

Evacuation Routes

Road data obtained from the Riverside County GIS Open Data Portal were utilized to identify points of exit from residential neighborhoods. Road centerlines were divided into four main classes:

1. *Interstate* – I-15
2. *State Highway* – Highway 79
3. *Arterials* – as defined by Riverside County GIS data "Arterials"
4. *Minor/Residential Roads* – All other roads not considered "Arterial" by the Riverside County GIS roads 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 a running a location query to find the parcels with residential general plan designations that intersect the single Combined Hazard Area. All residential parcels were mapped; those parcels within the Combined Hazard Area are identified by a darker outline.

Identification of Residential Subdivision Exit Points

The goal of this analysis was to find at least two separate points of exit from residential neighborhoods by following a rudimentary roadway network in which vehicles move from Minor/Residential Roads to Arterial, and eventually to a State Route/Interstate. The following assumptions apply:

1. Residential Developments have immediate access to Minor/Residential Roads but are distant from the State Highways and Interstates
2. Arterials connect Minor/Residential Roads to State Highways and Interstates
3. Residential Exit Points are the points where Minor/Residential Roads intersect Arterials, thereby providing eventual access to Highways and Interstates

Using ArcGIS, a point file representing the intersections of Minor/Residential and Arterials roads was created.

Analysis

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

1. One Exit Point with and distance to a Single Arterial (red parcels)
2. One Exit Point directly onto a Single Arterial (orange parcels)
3. Multiple Exit Points with access to a single Arterial (Loop Road) (blue parcels)
4. Multiple Exit Points with access to multiple Arterials (green parcels)

Results

There is one set of red parcels at the very north end of the planning area that only have one exit point. To get out, these residents would have to use the same local road to get to Washington St. This area also has some orange parcels, which only have one exit point, but have direct access to Washington St. There are a total of six residential areas of concern in high hazard zones that warrant further study.