This chapter has two sections: Safety and Noise.

SAFETY

Every general plan in California must have a “safety element” that addresses natural and manmade hazards and dangers. This section of General Plan 2025 examines and aims to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazards.

This section is presented in seven parts:

- Seismic and Other Geologic Hazards
- Flooding
- Hazardous Materials
- Fire Hazards
- Public Safety
- Disaster Response
- Water Supply

SEISMIC AND OTHER GEOLOGIC HAZARDS

The United States Geological Survey (USGS) has established probability estimates for significant earthquakes (magnitude 6.7 or greater) between 2003 and 2032. The following probabilities are estimated for faults in and around Walnut Creek:

- Hayward/Rodgers Creek Fault: 27 percent
- Calaveras Fault, northern segment: 11 percent
- Concord Fault: 4 percent
- Mt. Diablo Thrust Fault: 3 percent
- Greenville Fault: 3 percent

See Figure 1, Regional Faults and Probabilities, page 6-2, and Figure 2, Area Faults, page 6-3.

The City’s objectives are to prevent geologic hazards in new projects and reduce the risk of these hazards in existing developed areas.

GOAL 1

Protect life and property from geologic hazards.

Policy 1.1. Reduce the potential effects of seismic and other geologic hazards, including slope instability.

Action 1.1.1. Identify areas prone to seismic and other geologic hazards, including slope instability.

Action 1.1.2. Establish minimum road widths and clearances around structures at risk from known geologic hazards.

Action 1.1.3. Review and update the existing maps of geologic hazards.
Probability of 6.7 Richter scale earthquake, 2003 to 2032

Legend

- **Red**: 10% or more
- **Orange**: 5-9.9%
- **Yellow**: 1-4.9%


Figure 1. Regional Faults and Probabilities
Figure 2. Area Faults
Chapter 6, Safety and Noise

Action 1.1.4. Require appropriate mitigations for new development or redevelopment in areas prone to seismic and other geologic hazards.

Policy 1.2. “Limit development within high-risk geologic areas to a maximum density of one dwelling unit per 20 acres.”

Action 1.2.1. “Identify high risk areas after taking into account soil stability, history of soil slippage, proximity to earthquake faults, slope grade, accessibility, and drainage conditions, and continue to assign low intensity uses, not exceeding a density of one dwelling unit per 20 acres, to such areas. Responsibility: City Council.” See Figure 3, Liquefaction Susceptibility, page 6-5, and Figure 4, Mapped Landslides and Slopes Greater than 15 Percent, page 6-6.

Action 1.2.2. As updated seismic-hazard zone maps become available, incorporate them in the general plan.

Action 1.2.3. Identify areas where surface ruptures are most likely to occur and cause damage to human-made structures, such as dams.

Action 1.2.4. For development proposals submitted in areas near earthquake fault zones listed under the Alquist-Priolo Act, require a geotechnical evaluation to identify hazard mitigation measures needed to reduce the risk to life and property from earthquake-induced hazards.

Action 1.2.5. For development proposals submitted in areas near high or very high liquefaction-susceptibility areas, require a geotechnical evaluation to identify hazard mitigation measures needed to reduce the risk to life and property from liquefaction-induced hazards.

FLOODING

Historically, several streams in the Planning Area have flooded, including Walnut Creek, Las Trampas Creek, Grayson-Murderers Creeks (particularly in the Eccleston Avenue area), and San Ramon Creek (primarily at the confluence of the waterways downtown). Smaller streams subject to flooding include Tice Creek (particularly in the Castle Hill area) – and the Walnut Boulevard channel (also known as Homestead Creek) between Homestead Boulevard and Sierra Drive. (See Figure 5, Flood Zones, page 6-8.)

GOAL 2
Reduce the potential for flooding in flood-prone areas.

Policy 2.1. Reduce the risk of property damage and personal injury due to flooding.

Action 2.1.1. Limit the amount of impervious surface in flood-prone areas.

Action 2.1.2. Limit runoff in flood-prone areas.

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1 Policy 1.2 and Action 1.2.1 address the requirements of Measure P, Ord. 1781, 11/5/91, Sections 3g and 3h. See Appendix B for the complete “Walnut Creek Hillside/Open Space Protection Ordinance,” Measure P.
Figure 3. Liquefaction Susceptibility

Note: Areas with no color are classified as having "Very Low" liquefaction susceptibility. See text for further explanation of categories.
Figure 4. Mapped Landslides and Slopes Greater than 15 Percent

Base Map Date: January 16, 2004
Action 2.1.3. Work with the County to adopt similar standards for unincorporated parts of the Planning Area.

Action 2.1.4. Collect drainage fees for projects in designated drainage-improvement areas.

Action 2.1.5. Work with creekside property owners to reduce and mitigate flood hazards.
Figure 5. Flood Zones
HAZARDOUS MATERIALS

Federal, State, and local laws regulate the production, storage, handling, and disposal of hazardous materials and waste. Hazardous materials are those that, because of quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment. They include industrial wastes, pesticides, radioactive wastes, asbestos, and combustible fuels. Household hazardous wastes include pesticides, waste oil, paint supplies, car batteries, and pool chemicals.

Hazardous materials are transported through Walnut Creek on the area’s primary transportation routes—Interstate 680, Highway 24, and Ygnacio Valley Road—and via underground pipelines.

Both the State and the federal government require businesses that store or handle hazardous materials to have inventory and reporting programs. Businesses that store more than 55 gallons of liquid hazardous materials or 500 pounds of solid or 200 cubic feet of compressed gases must also file an annual business plan. The plans must establish incident prevention measures, hazardous-materials-handling protocols, and emergency-response-and-evacuation procedures. The Contra Costa County Fire Protection District enforces the business plans.

Walnut Creek households may dispose of hazardous waste at three County-provided collection centers. None are within the Planning Area.

GOAL 3
Reduce dangers from hazardous materials.

Policy 3.1. Facilitate the proper disposal of hazardous materials.

Action 3.1.1. Work with Central Contra Costa Solid Waste Authority (CCCSWA) to ensure that options are available for:
- Full-service hazardous-material disposal
- Household and small business hazardous-waste disposal
- Convenient, economical drop-off and/or pickup of used motor oil and antifreeze
- Convenient, economical drop-off and/or pickup of universal waste (e.g., computer monitors, televisions, consumer electronic devices, batteries)

Policy 3.2. Prioritize safety needs of non-industrial land uses.

Action 3.2.1. Carefully examine proposed mixed-use areas and plans with respect to the presence or prospective presence of hazardous materials.

Policy 3.3. Incorporate hazardous-material-abatement provisions in zoning and subdivision decisions and entitlement permits.

Policy 3.4. Work with federal and state authorities to ensure that any transport of hazardous materials through Walnut Creek is at the highest standard of safety.

Action 3.4.1. Designate hazardous-material carrier routes that direct hazardous materials away from populated and other sensitive areas.

Action 3.4.2. Prohibit hazardous-materials transport vehicles from parking on city streets.
Action 3.4.3. Require, as much as possible, that new pipelines and other channels carrying hazardous materials be placed to avoid residential areas and, in particular, areas where the population is less mobile (e.g., convalescent homes).

Policy 3.5. Require that soils, groundwater, and buildings affected by hazardous-material releases from prior land uses, and lead and asbestos potentially present in building materials, will not have the potential to adversely affect the environment or the health and safety of residents.

Action 3.5.1. Require an environmental investigation for hazardous materials when reviewing applications for new development in former commercial or industrial areas.

Policy 3.6. Require that new development and redevelopment protect public health and safety from hazardous materials.

Action 3.6.1. Require environmental investigations stipulated by State and County regulations for potential hazardous material releases from prior uses, as well as for lead and asbestos present in building materials.

FIRE HAZARDS

The Contra Costa County Fire Protection District (CCCFPD) provides fire-protection and first-responder emergency-medical services to Walnut Creek and the Planning Area. The district has 30 fire stations. Three of the stations are located within Walnut Creek city limits; a fourth is located within the Walnut Creek Planning Area and another station is located adjacent to the city limits on Geary Road. (See Figure 6, Fire Stations and Fire Service Areas in Walnut Creek, page 6-12.)

Urban Fires

The risk of structural fires within Walnut Creek is minimal. Fire-fighting resources are adequate, development continues to comply with applicable building codes, structures are relatively new and in good condition, and the CCCFPD implements a vigorous building-inspection program. Emergency access is good in all areas.

Wildland Fires

Walnut Creek is surrounded by more than 2,700 acres of undeveloped hillsides designated as open space. These areas pose a potential fire hazard to adjacent development.

The level of risk of wildland fire is determined by a number of factors, including the following:

- Frequency of critical fire weather
- Percentage of slope
- Existing fuel (vegetation, ground cover, building materials)
- Adequacy of access to fire suppression services
- Water supply and water pressure

The California Department of Forestry and Fire Protection (CDF) has mapped the relative wildfire risk to areas of significant population by intersecting residential housing density with proximate fire threat. (See Figure 7, Wildland-Urban Interface Fire Threat, page 6-13.) The map shows four risk levels: Moderate, High, Very High, and Extreme. The CDF map shows that no part of the Planning Area faces an “extreme” threat. The map shows that CDF gives much of the city a “very high” classification, principally because CDF maps the wildland fire zones to include a 1.5 mile buffer. As a result, the higher fire-threat levels of the
open space areas extend into much of the urbanized Walnut Creek on the map.

Shell, Lime, and Las Trampas Ridges all have high fire-hazard potential, and all lie above the 450-foot water service level of the East Bay Municipal Utility District (EBMUD) and above the 215-foot service elevation of the Contra Costa County Water District. Fire hazard in these areas is amplified by a lack of adequate water pressure and supply. Thus, fire hazard is of particular concern at the municipal golf course and in the southeastern areas of Ygnacio Valley near the ends of Snyder Lane and Hutchinson Road near Northgate Road.

The fire district tries to minimize fire risk through its weed-abatement program, which covers all wildland areas within the County’s jurisdiction. The district also works with Mt. Diablo State Park, which has a State and locally approved fire management plan that coordinates among a number of State, regional, and county agencies.

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**GOAL 4**

Strive to prevent and reduce damage related to fire hazards.

**Policy 4.1.** Regulate projects in high-risk areas. (See Figure 7, page 6-13.)

**Policy 4.2.** Work with the Contra Costa County Fire Protection District to ensure adequate fire response times and address other fire-related issues in the Planning Area.

**Action 4.2.1.** Require that all new development or redevelopment plans be submitted to the Fire District for review.

**Action 4.2.2.** Require greenbelt zones and fire-resistant landscaping and building materials in developments in and on the edges of higher risk areas. (See Figure 7, page 6-13.)

**Action 4.2.3.** Establish minimum road widths and clearances around structures in high, very high, and extreme fire risk areas. (See Figure 7, page 6-13.)

**Action 4.2.4.** Working with the Contra Costa County Fire Protection District, use nuisance ordinances to reduce the risks of dry grasses.
Figure 6. Fire Stations and Fire Service Areas in Walnut Creek

Note: Station radii depicting response areas are shown for general reference only. Actual response times measured by roadway length. Refer to text for further discussion.
Figure 7. Wildland-Urban Interface Fire Threat

Threat to People From Wildland Fire
- Moderate
- High
- Very High
- Extreme

Highways
Major Roads
Planning Area Boundary

Note: See text for further explanation of threat categories.
PUBLIC SAFETY

A five-year strategic plan sets forth the Police Department’s approach to providing for public safety. The plan, first prepared in 1973, has evolved over the years to critically examine police operations in relation to community needs.

The nature of policing in the community must be responsive to the dynamics of the community, such as changes in population demographics (e.g., a higher concentration of seniors in the community), increases in traffic, commercial growth, new types of social and recreational activities, and a greater number of late-night downtown dining and entertainment venues and events. The challenge is to remain alert to changes that influence police/community communications and crime-prevention efforts.

Traffic patrol leaves from police garage

The City’s Community Policing Team (COP) provides services for quality-of-life issues, including crime prevention, alarm monitoring and response, and school liaison and classes. In 2005, the team had five members.

GOAL 5
Promote public safety.

Policy 5.1. Address school safety, in particular related to providing emergency access to schools during school hours.

Policy 5.2. Maintain a response time of less than 5 minutes for emergency calls and for other calls less than 20 minutes, 95 percent of the time.

Policy 5.3. Support Community Oriented Policing.

Policy 5.4. Cooperate with the County on public safety and policing issues outside the city limits.

Policy 5.5. Seek ways to reduce police service demands through project design enhancements.

Action 5.5.1. Incorporate crime-reduction and public-safety features in the design and planning of private and public projects.

Action 5.5.2. Submit all discretionary permits to the Police Department for analysis of and recommendations to reduce impacts on police services.
Local, state, and federal governments share responsibility for preserving life and safety. The City of Walnut Creek has prepared an Emergency Operation Plan (EOP) that identifies and allocates resources in response to emergencies, from preparation through recovery. The EOP identifies the City’s emergency planning, organizational, and response policies and procedures and how they will be coordinated with emergency responses from other levels of government.

Walnut Creek’s EOP unfolds in three phases: 1) readiness, 2) response, and 3) recovery.

Events that may trigger phase one (readiness) include the following:

- Credible earthquake predictions
- Flood or special weather advisories
- Potential dam failure advisories
- Red flag (high fire danger) warnings
- Hazardous materials incidents
- Information indicating a high potential for violence, terrorism, or civil disturbance

The second phase (response) emphasizes reducing the effects of an emergency or disaster. This phase involves both pre-emergency and emergency activities.

Pre-emergency activities include the following:

- Evacuations
- Requests for mutual aid
- Proclamation of an emergency

Emergency activities encompass actions that save lives and property, control the emergency situation, or minimize the impacts of the disaster. Activities include:

- Rescue operations
- Treating the injured
- Restricting and/or directing the movement of people and traffic
- Preparing detailed damage assessments
- Operating mass care facilities
- Coroner operations
- Providing information to the public

Third phase (recovery) activities focus on post-disaster rebuilding efforts, such as the following:

- Hazard mitigation
- Identification of residual hazards
- Restoration of essential services
- Application for State or federal assistance

The ability to respond to emergencies depends, in large part, on the area’s critical facilities—facilities that house emergency responders and those that provide emergency services. They include hospitals, fire stations, police and emergency services facilities, and utility and communications facilities and transmission lines.
G O A L 6
Provide quick response to disasters.

Policy 6.1. In the event of a disaster, strive to reduce injury, loss of life, and property damage.

Action 6.1.1. Prepare and adopt a list and map of evacuation routes.


Policy 6.1.3. Following a disaster, require the screening of debris for hazardous materials before allowing reuse or recycling.

Policy 6.2. Safeguard the city’s critical facilities and make any repairs as quickly as possible.

Action 6.2.1. Include a map of critical facilities in the Emergency Operations Plan.

W A T E R S U P P L Y
Two water districts supply Walnut Creek’s water: The Contra Costa Water District (CCWD) and the East Bay Municipal District (EBMUD). All water distribution and treatment facilities within Walnut Creek are owned and operated by EBMUD or CCWD.

G O A L 7
Work with the water districts to ensure safe and adequate water supplies for the Planning Area.

Policy 7.1. Work with water agencies to secure water supplies to serve the Planning Area’s growing number of residents and employees.

Action 7.1.1. Work with water agencies and the fire district to ensure the availability of an adequate water supply, particularly during peakload periods, to serve firefighting needs.
NOISE

State law mandates that the general plan have a noise element that identifies noise sources in the planning area and strategies for reducing any negative impacts from noise on the community.

WHAT IS NOISE?
Noise is unwanted sound. Excessive noise can cause hearing loss and interfere with human activity. It can disrupt communication and affect a person’s performance.

Which sounds are considered noise is subjective and varies from person to person and with the time of day and setting.

Sensitivity to noise increases in the evening and at night. Excessive noise interferes with the ability to sleep, so 24-hour descriptors were developed to add artificial noise penalties to quiet-time noise events. State law requires general plans to use the Community Noise Equivalent Level (CNEL) or the Day/Night Average Sound Level (L_{dn}) to describe the community noise environment and its effects on the population. The two are essentially the same. General Plan 2025 uses L_{dn}. (See Figure 8, Land Use/Noise Compatibility, page 6-17.)

THE URBAN NOISE ENVIRONMENT

Noise measurements conducted in Walnut Creek as part of General Plan 2025 reflect a variety of noise environments. The loudest noise source is Interstate 680. In a typical location 250 feet from the center of the highway, the L_{dn} was 75 dBA. At or near the freeway, the noise level ranged from 78 L_{dn} to 80 L_{dn}.

BART generates a noise level of 66 L_{dn}, as measured along Minert Street, 80 feet from the BART tracks. Noise resulting from BART trains is intermittent and has a unique character that is easily distinguishable from other traffic noise.

Along local routes of regional significance (e.g., Treat Boulevard and Ygnacio Valley Road) and arterials such as Mt. Diablo Boulevard, roadside noise levels range from 72 L_{dn} to as high as 75 L_{dn}. Along arterials such as Broadway and Walnut Avenue and along most of the city’s major and minor streets, the measured noise level ranges from 60 L_{dn} to 70 L_{dn}.

Away from streets carrying substantial through traffic, Walnut Creek remains quiet.

Parking lot maintenance generates noise. Because parking demand is high in many of the city’s business and commercial districts, parking facilities must maintained during off-peak hours. Commercial parking areas near residential areas create a conflict between the need to maintain parking facilities and pick up trash, and the demand for residential quiet.

The Municipal Code, Title 4, Article 2, addresses excessive, unreasonable, and prolonged noise, including the use of amplified sound, building construction and repair, and noise from leaf blowers.

Goal 9 and its policies and actions aim to control noise in existing residential areas by not allowing noise levels to increase substantially, regardless of the absolute noise level.
GOAL 8
Provide compatible noise environments for new development, redevelopment, and condominium conversions.

Policy 8.1. Apply the noise and land use compatibility table and standards to all residential, commercial, and mixed-use proposals, including condominium conversions.

Policy 8.2. Address the issue of residences affected by intermittent urban noise from sources such as heating, ventilating, and air conditioning equipment and by outdoor maintenance activities, such as parking lot sweeping and early morning garbage collection.

Action 8.2.1. For new single-family residential projects, use a standard of 60 L_{dn} for exterior noise in private use areas.

Action 8.2.2. For new multifamily residential projects and for the residential component of mixed-use development, use a standard of 65 L_{dn} in outdoor areas, excluding balconies.

Action 8.2.3. Strive for a maximum interior noise levels at 45 L_{dn} in all new residential units.

Action 8.2.4. For new downtown mixed-use development or for new residential development affected by noise from BART or helicopters, ensure that maximum noise levels do not exceed 50 L_{dn} in bedrooms and 55 L_{dn} in other rooms.

Action 8.2.5. Establish single-event noise standards for new downtown mixed-use development or for new residential development affected by noise from BART or helicopters.

GOAL 9
Control excessive noise sources in existing development.

Policy 9.1. Control all residential and commercial noise sources to protect the existing noise environment.

Action 9.1.1. Require the evaluation of noise mitigation measures for projects that would cause a substantial increase in noise.

Policy 9.2. Strive to reduce traffic noise levels in existing residential areas.

Action 9.2.1. Install quiet pavement surfaces for repaving projects, where feasible.

Action 9.2.2. Control vehicle-related noise.
Figure 8. Land Use/Noise Compatibility

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Exterior Noise Exposure (L&lt;sub&gt;DN&lt;/sub&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55</td>
</tr>
<tr>
<td>Single-family residential</td>
<td></td>
</tr>
<tr>
<td>Multifamily residential, hotels, and motels</td>
<td></td>
</tr>
<tr>
<td>See footnote(a)</td>
<td></td>
</tr>
<tr>
<td>Outdoor sports and recreation, neighborhood parks and playgrounds</td>
<td></td>
</tr>
<tr>
<td>Schools, libraries, museums, hospitals, personal care, meeting halls, churches</td>
<td></td>
</tr>
<tr>
<td>Office buildings, business commercial, and professional</td>
<td></td>
</tr>
<tr>
<td>Auditoriums, concert halls, amphitheaters</td>
<td></td>
</tr>
</tbody>
</table>

(a) Require noise mitigation to reduce interior noise levels pursuant to Actions 8.2.3. and 8.2.4.

- **NORMALLY ACCEPTABLE** Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

- **CONDITIONALLY ACCEPTABLE** Specified land use may be permitted only after detailed analysis of the noise reduction requirements.

- **UNACCEPTABLE** New construction or development should not be undertaken because mitigation to comply with noise element policies is unfeasible.
