

Safety Element

Ensuring that Elk Grove is a safe community is a major goal of the City of Elk Grove. This Safety Element identifies the policies and programs the City will implement to make sure that the city's residents and businesses are safe from known and reasonably foreseeable hazards.

POTENTIAL SAFETY HAZARDS

Several major sources of potential safety hazards exist in Elk Grove and are addressed in this Safety Element:

- Potential release of toxic or hazardous substances as the result of accidents on truck routes and/or railroad lines which pass through Elk Grove.
- The release of toxic or hazardous substances which are used by commercial and industrial businesses in Elk Grove.
- Flooding
- Regional seismic activity and other geologic hazards
- Traffic accidents at at-grade railroad crossings

This Safety Element provides the City's policies for ensuring that the risk associated with these hazards can be reduced to an acceptable level; the City acknowledges that actions or policy statements on the behalf of the City cannot eliminate *all* risks.

This Element also provides policies related to police and fire protection and steps the City can take to assist in the prevention of fire hazards and crime.

POTENTIAL RELEASE OF HAZARDOUS SUBSTANCES

A number of uses throughout Elk Grove—from dry cleaners to filling stations to industrial users—maintain stocks of hazardous substances on site, and therefore raise the potential for the accidental release of these substances.

In addition, two freeways, several major surface routes, and two active rail lines traverse the Planning Area. Vehicles and rail cars carrying hazardous materials use all of these routes, and therefore bring the risk of an accident involving hazardous substances to large areas of Elk Grove.



Both of the freeways in the planning area carry heavy truck traffic, including trucks carrying hazardous and toxic materials.

FLOODING

Flooding affects a large part of the Planning Area, primarily in the eastern portion where major drainage facilities have not been built and stormwater flows either in natural channels or small ditches whose capacity is frequently exceeded. In the "Sheldon" area of Elk Grove, local flooding is widespread but generally minor; the flat land causes floodwaters to spread out, reducing threats to life.



Land inundated by the Cosumnes River near Michigan Bar in 1997, a year that saw historic flooding levels.

Along the eastern and southern edges of the Planning Area, the Cosumnes River represents a major flood hazard. The Cosumnes River is the last river in California, which remains undammed along its entire length, so flooding caused by this river can be extensive.

For more information on flooding in the Planning Area, please refer to the General Plan Background Report.

REGIONAL SEISMIC ACTIVITY/GEOLOGIC HAZARDS

No known earthquake faults pass through the city limits or the Planning Area. However, faults even far from the Planning Area have the potential to generate earthshaking which could cause damage in Elk Grove. *(for more information on seismic and geologic conditions, please refer to the Background Report.)*

This Safety Element provides the City's policies related to reducing the risk of property damage and injury to persons as the result of groundshaking.

INDUSTRIAL USES

A variety of industrial uses are located in Elk Grove and the Planning Area, primarily in the southern portion of Elk Grove and in the Laguna West area west of the city. Many of these industrial facilities use and/or store chemicals and other materials that could result in damage both on- and off-site in the event of an accident.



Storage tanks are visible in this aerial photograph of industrial facilities on Waterman Road in Elk Grove

This Safety Element sets forth the City's policies associated with the placement of land uses near facilities of all kinds that pose a threat of injury in the event of accidental or deliberate incidents.

AT-GRADE RAILROAD CROSSINGS

Most of the roadway/railroad crossings in Elk Grove are "at-grade"—the roadway crosses the rails, with crossing gates provided to halt vehicle traffic while the train passes through. Two major crossings—on Elk Grove Boulevard and Laguna Boulevard in the western area of Elk Grove—are provided with a bridge crossing to carry the roadway over the rails.



This accident in February 2001 at Elk Grove Boulevard led to calls for increased safety at railroad crossings.

While at-grade crossings are safe, a history of accidents—particularly at the Elk Grove Boulevard crossing in Old Town—have demonstrated the potential for accidents and injuries at these locations.

WATER SUPPLY FOR FIREFIGHTING

The issue of providing sufficient water supply (both water pressure and storage capacity) is addressed in the Public Facilities and Finance Element of this General Plan. *Please see the Background Report for information on the water systems and master plans maintained by the agencies that provide water service to Elk Grove.*

FIRE HAZARDS

There are no known fire hazards in Elk Grove that require the implementation of specific policies in this General Plan. *Please see the Background Report for further information on the fire Department Master Plan maintained by the Elk Grove Community Services District.*

EVACUATION ROUTES

The roadway system in Elk Grove provides numerous evacuation routes—please see the Circulation Element of this General Plan for information and policies related to roadways.

POLICE PROTECTION



Police protection in Elk Grove is provided by the Elk Grove Police Department, which operates from headquarters on Bond Road. Detailed information on current staffing levels and service levels provided by the Elk Grove Police Department is

included in the General Plan Background Report.

FIRE PROTECTION

Fire protection services in Elk Grove are provided by a separate agency, the Elk Grove Community Services District (EGCSD). The EGCSD maintains an extensive system of fire stations throughout Elk Grove and a portion of the Planning Area outside the city limits.



Elk Grove firefighters in action in June 2000

Because the City of Elk Grove does not provide fire protection services, this General Plan does not contain policies or action items that provide for the construction or operation of fire stations or related facilities; these facilities will be constructed pursuant to the EGCSD's Master Plan (*summarized in the General Plan Background Report*). This Element, instead, focuses on policies and action items aimed at coordinating the efforts of the City with those of the EGCSD to ensure that an adequate level of fire protection is available at all times in Elk Grove.

This Safety Element implements the following Goals of the City of Elk Grove:

Guiding Goal 1: A High Quality of Life for All Residents
Focused Goal 1-1: A safe community, free from manmade and natural hazards

The following are the Safety Policies of the City of Elk Grove:

GENERAL SAFETY POLICIES

SA-1 The City will seek to maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards in Elk Grove.

SA-2 In considering the potential impact of hazardous facilities on the public and/or adjacent or nearby properties, the City shall consider the hazards posed by reasonably foreseeable events.¹ Evaluation of such hazards shall address the potential for events at facilities to create hazardous physical effects at offsite locations that could result in death, significant injury, or significant property damage. The potential hazardous physical effects of an event need not be considered if the occurrence of an event is not reasonably foreseeable as defined in Policy SA-3. Absent substantial evidence to the contrary, a “hazardous physical effect” from an event shall be a level of exposure to a hazardous physical effect in excess of the levels identified in Policy SA-4.

¹ Please see the Glossary for a definition of “event” as used in this policy.

SA-3 For the purpose of implementing Policy SA-2, the City considers an event to be “reasonably foreseeable” when the probability of the event occurring is as indicated in the table below.

Land Use	Probability of Occurrence Per Year
“Agriculture, Light Industrial and Industrial” Uses involving continuous access and the presence of limited number of people but easy evacuation, e.g. open space, warehouses, manufacturing plants, etc.	Between 100 in one million and 10 in one million (10 ⁻⁴ to 10 ⁻⁵)
“Commercial” Uses involving continuous access but of easy evacuation, e.g. commercial uses, offices, etc.	Between 10 in one million and 1 in one million (10 ⁻⁵ to 10 ⁻⁶)
“Residential” All other land uses without restriction including institutional uses, residential areas, etc.	1 in one million and less (10 ⁻⁶)

SA-3-Action 1 As part of the environmental review process for proposed projects, the City shall analyze potential safety-related impacts resulting from or affecting new development which could cause or be affected by reasonably foreseeable events. This analysis shall include the potential for events to occur at the facility, and the potential for hazardous physical effects to result from such events with respect to the hazards listed in Table SA-A.

SA-3-Action 2 The City shall maintain a database which records, in maps and text, the identified off-site hazards from any reasonably foreseeable events at hazardous facilities in Elk Grove, and shall make this information available to the public.

SA-4 The Maximum Acceptable Exposure standards shown in Table SA-A shall be used in determining the appropriateness of either:

- (1) Placing a use near an existing hazardous facility which could expose the new use to hazardous physical effects, or
- (2) Siting a hazardous facility that could expose other nearby uses to hazardous physical effects.

Absent substantial evidence to the contrary, the placement of land uses that do not meet the Maximum Acceptable Exposure standards shall be considered to result in a significant, adverse impact for the purposes of CEQA analysis.

SA-5 The City will cooperate with other local, regional, state, and federal agencies, and with rail carriers in an effort to secure the safety of all residents and businesses in Elk Grove.

SA-5-Action 1 Establish an Emergency Operations Center (EOC) to coordinate and direct overall emergency response operations. The establishment of the EOC should be coordinated with the Elk Grove Police Department, appropriate City departments, the Elk Grove CSD Fire District, and the County Sheriff's Department.

**Table SA-A
Maximum Acceptable Exposure Criteria
For Agricultural, Residential, and Non-Residential Land Uses**

Land Use	Maximum Acceptable Exposure			
	Over-pressure	Airborne Toxic Substances	Radiant Heat	Shrapnel
Agriculture	3.4 psig ⁽¹⁾	Dose = ERPG-2 ⁽²⁾ ppm for 60 min Exposure time = 60 min	Radiant dose = 200 kJ/m ² ⁽³⁾	All uses shall be located such that the possibility of injury for an unprotected person due to shrapnel released by a reasonably foreseeable event ⁽⁴⁾ is less than 1/10 ⁻⁶ (1/1,000,000)
Residential (all density ranges) ⁽⁵⁾	1.0 psig	<i>For example: chlorine</i> ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min	Exposure time = 30 sec Target radiant energy = Radiant dose/Exposure time	
Office/ Commercial	1.0 psig	Target concentration = Dose/Exposure time Target concentration = (180 ppm-min) / 60 min Target concentration = 3 ppm chlorine	Target radiant energy = (200 kJ/m ²) / 30 sec Target radiant energy = 6.67 kW/m ²	
Light industrial	1.25 psig	Dose = ERPG-2 ppm for 60 min Exposure time = 30 min <i>For example: chlorine</i> ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min Target concentration = Dose/Exposure time Target concentration = (180 ppm-min) / 30 min Target concentration = 6 ppm chlorine	Radiant dose = 200 kJ/m ² Exposure time = 15 sec Target radiant energy = Radiant dose/Exposure time	
Industrial	3.4 psig	Dose = ERPG-2 ppm for 60 min Exposure time = 15 min <i>For example: chlorine</i> ERPG-2 = 3 ppm Dose = 3 ppm x 60 min = 180 ppm-min Target concentration = Dose/Exposure time Target concentration = (180 ppm-min) / 15 min Target concentration = 12 ppm chlorine	Target radiant energy = (200 kJ/m ²) / 15 sec Target radiant energy = 13.34 kW/m ²	

(1) psig: pounds per square inch gauge

(2) ERPG-2: Emergency Response Planning Guidelines. The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action; ppm: parts per million

(3) kJ/m²: kilojoules per square meter (a measure of radiant heat received); kW/m²: kilowatts per square meter; 1.0 kJ/m² = 1.0 kW/m² for 1 sec = 1 kW/(m²-sec)

(4) As defined in Policy SA-3

(5) Includes schools, parks, libraries, and other similar public gathering places regardless of their location.

SA-5-Action 2 Establish an emergency response organization consisting of representatives from the Elk Grove Police Department, City departments, the Elk Grove CSD Fire Department, County agencies, utility agencies, schools, and the public.

SA-5-Action 3 Participate in State mutual aid agreements with neighboring cities and counties; State and federal emergency relief agencies; and private enterprises such as Red Cross, Salvation Army, and local medical institutions to assist in shelter, relief, and first aid operations. Encourage cooperation among adjacent communities to provide backup fire suppression and law enforcement assistance in emergency situations.

SA-5-Action 4 Participate in the Standard Emergency Management System.

SA-5-Action 5 Comply with the State of California Emergency Services Act.

SA-6 Consider developing and adopting a pre-disaster ordinance for post-disaster recovery and reconstruction that includes provisions for debris clearance, damage assessment, demolitions, re-occupancy and building moratorium criteria, fee waivers and deferrals, and expedited permitting procedures for repair and reconstruction.

SAFETY POLICIES: ACCIDENTAL RELEASE OF TOXIC OR HAZARDOUS SUBSTANCES

SA-7 The City of Elk Grove will work to identify and eliminate hazardous waste releases from both private companies and public agencies.

SA-8 Storage of hazardous materials and waste shall be strictly regulated, consistent with state and federal law.

SA-8-Action 1 Regularly review the City's codes to ensure that City regulations reflect the most up-to-date standards for the storage, handling, and use of hazardous and toxic materials.

SA-8-Action 2 Secondary containment and periodic examination shall be required for all storage of hazardous and toxic materials, consistent with the requirements of state or federal law.

SA-8-Action 3 As part of the review and approval of development plans and building permits, ensure that secondary containment is provided for hazardous and toxic materials.

SA-8-Action 4 Prior to site improvements for properties that are suspected or known to contain hazardous materials and sites that are listed on or identified on any hazardous material/waste database search shall require that the site and surrounding area be reviewed, tested, and remediated for potential hazardous materials in accordance with all local, state, and federal regulations.

SA-9 The City shall seek to ensure that all industrial facilities are constructed and operated in accordance with up-to-date safety and environmental protection standards.

SA-9-Action 1 Support continued enforcement of permitting requirements for radioactive materials, and enforce public safety standards for the use of these materials, including the placarding of transport vehicles.

SA-10 Industries which store and process hazardous or toxic materials shall provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the City of Elk Grove.

SA-10-Action 1 Consider the impact of proposed industrial development projects with respect to transport of hazardous materials within the city. To the extent feasible, uses requiring substantial transport of hazardous materials should be located to direct such traffic away from the city's residential and commercial areas.

SAFETY POLICIES: TRANSPORT OF HAZARDOUS MATERIALS

SA-11 Support continued coordination with the State Office of Emergency Services, the State Department of Toxic Substances Control, the State Highway Patrol, the Sacramento County Department of Environmental Health Services, the Elk Grove CSD Fire District, the Sheriff's Department, and other appropriate agencies in hazardous materials route planning and incident response.

SA-11-Action 1 Assist all appropriate state and federal agencies which regulate the transport of vehicles carrying hazardous materials through the city.

SA-11-Action 2 Request that state and federal agencies with responsibilities for regulating the transportation of hazardous materials review regulations and procedures, in cooperation with the City, to determine means of mitigating the public safety hazard in urbanized areas.

SAFETY POLICIES: DRAINAGE AND FLOODING

Note: The reader should also consult the Conservation and Air Quality Element for additional policies dealing with development within floodplain areas.

SA-12 The City opposes the construction of flood control facilities that would alter or reduce flows in the Cosumnes River and supports retention of the Cosumnes River floodplain in non-urban uses consistent with location in an area subject to flooding.

SA-13 The City shall require that all new projects not result in new or increased flooding impacts on adjoining parcels on upstream and downstream areas.

SA-14 The City shall give priority to the designation of appropriate land uses in areas subject to flooding to reduce risks to life and property. Construction of new flood control projects shall have a lower priority, unless land use controls (such as limiting new development in flood-prone areas) is not sufficient to

reduce hazards to life and property to acceptable levels.

SA-15 Development shall not be permitted on land subject to flooding during a 100-year event, based on the most recent floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or updated mapping acceptable to the City of Elk Grove. Potential development in areas subject to flooding may be clustered onto portions of a site which are not subject to flooding, consistent with other policies of this General Plan.

SA-16 A buildable area outside the 100-year floodplain must be present on every residential lot sufficient to accommodate a residence and associated structures. Fill may be placed to create a buildable area only if approved by the City and in accordance with all other applicable policies and regulations.

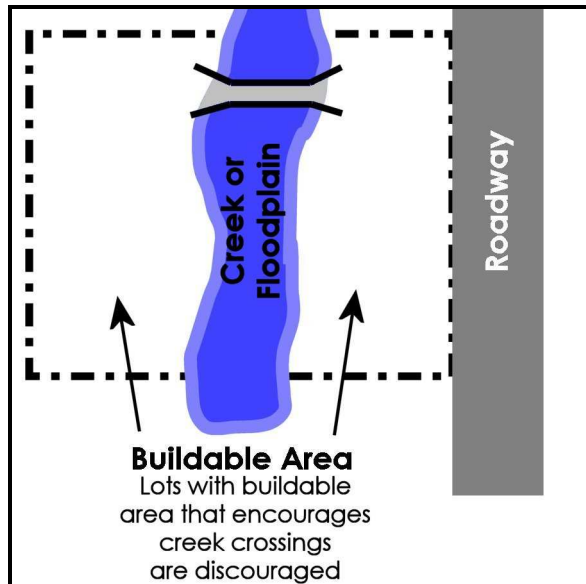
The use of fill in the 100-year floodplain to create buildable area is strongly discouraged, and shall be subject to review to determine potential impacts on wildlife, habitat, and flooding on other parcels.

SA-17 Vehicular access to the buildable area of all parcels must be at or above the 10-year flood elevation.

SA-18 Creation of lots whose access will be inundated by flows resulting from a 10-year or greater storm shall not be allowed. Bridges or similar structures may be used to provide access over creeks or inundated areas, subject to applicable local, state, and federal regulations.

SA-19 Discourage the number of crossings of natural creeks in order to reduce potential flooding and access problems.

SA-19-Action 1 Lots or parcels which will contain two or more buildable areas on both sides of a creek or floodplain shall be discouraged. *See the figure below.*



SA-20 Parcels should not be created on which the presence of easements, floodplain, marsh or riparian habitat, or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

SA-21 Where necessary due to clear dangers to life or property, the City will support the construction of flood control projects.

SA-21-Action 1 The City will participate through the Sacramento Area Flood Control Agency in obtaining federal authorization for construction of a backbone flood control project along the Sacramento River and the immediate connection of local internal streams to this river.

SA-21-Action 2 The City will continue local efforts that encourage implementation of the Federal Flood Insurance Program.

SA-21-Action 3 The City will participate with the City of Sacramento, the Army Corps of Engineers and other Federal, State and local governments and agencies to develop policies to finance, construct, and

plan flood improvements to eliminate flooding in Elk Grove.

SA-22 New and modified bridge structures shall not cause an increase in water surface elevations of the 100-year floodplain exceeding one foot, unless analysis clearly indicates that the physical and/or economic use of upstream property will not be adversely affected.

SA-23 The City shall require all new urban development projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.

SA-23-Action 1 As part of the review of development projects, ensure that runoff control measures are planned and provided.

SA-24 Drainage facilities should be properly maintained to ensure their proper operation during storms.

SAFETY POLICIES: GEOLOGIC AND SEISMIC HAZARDS

SA-25 The City supports efforts by Federal, State, and other local jurisdictions to investigate local seismic and geological hazards and support those programs that effectively mitigate these hazards.

SA-25-Action 1 Implement the Uniform Building Code to ensure that structures meet all applicable seismic standards.

SA-26 The City shall seek to ensure that new structures are protected from damage caused by geologic and/or soil conditions.

SA-26 Action 1 Require that a geotechnical report or other appropriate analysis be conducted to determine the shrink/swell potential and stability of the soil for public and private construction projects and identifies measures necessary to ensure stable soil conditions.

SAFETY POLICIES: RAILROAD CROSSINGS

SA-27 The City shall initiate as well as cooperate in improvements at existing railroad-at-grade crossings to improve public safety. This may include construction of grade-separated crossings and other appropriate safety features.

SA-28 The City shall take all appropriate measures to ensure that railroad crossings in Elk Grove are made as safe as possible.

SA-28-Action 1 The City will coordinate with the railroads operating in Elk Grove to ensure that all appropriate safety measures are implemented in their operations in the city.

SA-28-Action 2 The City will seek to improve the safety at rail crossings by continuing to investigate improvements in crossing gates and warning devices.

SA-28-Action 3 The City will make available information on railroad crossing safety at City Hall and on the City's web site to encourage safe practices by Elk Grove residents and businesses.

SAFETY POLICIES: EVACUATION ROUTES

A properly planned and implemented roadway system within the city will facilitate the efficient movement of police and fire fighting equipment and the safe evacuation of residents. Please refer to the Circulation Element for policies related to the city's overall circulation system.

SAFETY POLICIES: POLICE PROTECTION

SA-29 The City shall regularly monitor and review the level of police staffing provided in Elk Grove, and ensure that sufficient staffing and resources are available to serve local needs.

SA-30 Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property when feasible.

SAFETY POLICIES: DESIGN OF SITES AND BUILDINGS

SA-31 Encourage the use of Crime Prevention Through Environmental Design (CPTED) principles in the design of development projects and buildings. These basic principles include:

Natural Surveillance

A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas and building entrances: doors and windows that look out on to streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; adequate nighttime lighting.

Territorial Reinforcement

Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Promoted by features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and "CPTED" fences.

Natural Access Control

A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Gained by designing streets, sidewalks, building entrances and neighborhood gateways to clearly indicate public routes and discouraging access to private areas with structural elements.

Target Hardening

Accomplished by features that prohibit entry or access: window locks, dead bolts for doors, interior door hinges.

SAFETY POLICIES: FIRE PROTECTION

SA-32 Cooperate with the Elk Grove Community Services District (EGCSD) Fire Department to reduce fire hazards, assist in fire suppression, and promote fire safety in Elk Grove.

SA-32-Action 1 Review new development for adequate water supply and pressure, fire hydrants, and access to structures by fire fighting equipment and personnel.

SA-32-Action 2 Review projects for compliance with the Fire Code as part of the building permit process.

SA-32-Action 3 Work with the EGCSD to develop high visibility fire prevention programs, including those which provide voluntary home inspections and awareness of home fire prevention measures.

SA-32-Action 4 Require, where appropriate, on-site fire suppression systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

SA-32-Action 5 The City shall continue to maintain, periodically update, and test the effectiveness of its Emergency Response Plan.

SA-32-Action 6 The City shall require the installation of earthquake-triggered automatic gas shut-off sensors in high-occupancy facilities and in industrial and commercial structures.

SA-32-Action 7 Work with the EGCSD Fire Department to enforce all existing codes and ordinances regarding fire protection, including building inspection and vegetation management.

SAFETY POLICIES: WATER SUPPLY FOR FIREFIGHTING

Please see the Public Facilities and Finance Element for policies related to water supply.

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