

Chapter IV

Safety Plan



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Section I

VISION

The City of Twentynine Palms will be a safe place to live. Low crime, safe streets, quiet neighborhoods, and protection from natural hazards will be community assets found and maintained in the City.

Section II

PURPOSE

Embodied in the Safety Plan is the City's master plan for ensuring the City's vision with regard to providing a safe place in which to live and visit. The Plan coordinates the planning of services with the demand for and availability of service. In addition to identifying the agencies which provide protection service, the Plan provides goals, policies and programs which, through implementation, are essential in achieving a safe living environment for all residents and visitors.

Section III

POLICE SERVICE

Police protection is provided through contract with the San Bernardino County Sheriff's Department. Service is provided from the Morongo Basin station at 6527 White Feather Road in Joshua Tree and Sheriff's Department personnel are provided a satellite office at Twentynine Palms City Hall on Adobe Road. Police services are dispatched from the Communications Center in Victorville but the satellite office is centrally located for efficient response.

Crime reducing projects such as Operation CleanSweep and the Choices Youth Program play an integral role in keeping the City safe. CleanSweep is designed to address problems at local schools, which are not of a significant criminal nature, and allows school personnel to write citations for such violations. Choices is an activity/education program for at-risk youth; Choices is administered by the City's Community Services Department in cooperation with Sheriff's Department personnel. Additionally, the Juvenile Crime Reduction Plan allows teams of officers to "adopt" a local school to reduce campus-related crime and assist with individual Safe School Plans.

Grant funded special operations help augment patrol effectiveness. Through these programs the Department conducts compliance sweeps, traffic safety checkpoints and other problem-oriented policing efforts throughout the City. The Department's Off-highway Vehicle Enforcement Team patrols back roads for safety violations and nuisance complaints.

The Citizen Patrol Unit is very active in the City. These volunteers provide thousands of hours of additional patrol which assists officers in carrying out their responsibilities in providing police protection.

Section IV**FIRE PROTECTION**

Fire protection is provided by the Twentynine Palms Fire Department, a division of the Twentynine Palms Water District. The Department protects 88 square miles, including the entire City. The Department operates two stations, one within the City just south of Twentynine Palms Highway on the west side of Adobe Road, and the other on Lear Avenue north of the City. Response times can be affected by the location of fire stations, and the City's circulation system can provide for the ability of fire apparatus to respond efficiently.

Terrain in and around the City is covered with sparse vegetation consisting of grasses, and other native desert plants. Because of the limited vegetation which occurs in and around the City, wildland fires typically have a slow rate of spread unless influenced by weather or topography. Weather conditions are typically dry and often windy and summer temperatures can easily exceed 100 degrees Fahrenheit. Such conditions may contribute to and intensify a wildland fire. Because fire travels more quickly uphill, portions of the City could experience faster spread than others. Even though areas of steeper terrain are generally less developed, the risk of wildland fire engulfing inhabited structures in the City does exist.

Three classes of slope are used by the California Department of Forestry in calculating the topographic effects on fire severity; they are depicted in Table I.

Table I TOPOGRAPHIC EFFECTS ON FIRE SEVERITY		
Class	Slope	Possible Fire Fighting Methods
Class I	0% to 30%	Direct attack possible with all wheel drive fire trucks, bulldozers, hand crews and aircraft.
Class II	31% to 50%	Beyond operating capability of all-wheel drive vehicles. Drive attack possible with bulldozers, hand crews and aircraft.
Class III	51% or more	Mostly beyond operating capability of bulldozers. Hand crews and aircraft become primary tools.

The Twentynine Palms Fire Department operates a fleet of apparatus capable of suppressing wildland fires and department personnel are trained to the National Wildfire Coordination Group and California State Fire Training standards.

Wildland fuel areas have been identified by the Department; these areas contain higher density of vegetation and are particularly susceptible to wildfire. Some of the more densely developed areas of the City are

adjacent the identified wildland fuel areas. These areas include:

- ! One square mile north of Two Mile Road, between Morongo Road and Mesquite Springs Road.
- ! South of Two Mile Road in the vicinity of Mesquite Springs Road, including the vicinity surrounding Twentynine Palms High School.
- ! North of Two Mile Road, between Adobe Road and Utah Trail, including relatively dense residential development in the Ben Hunter Tract as well as areas surrounding Twentynine Palms Junior High School and Twentynine Palms Elementary School.
- ! North of Twentynine Palms Highway, west of the downtown extending east to Utah Trail.
- ! North of Baseline Road between Utah Trail and Adobe Road, including the area surrounding Palm Vista Elementary School.

Additionally, heavy wildland fuel areas have been identified by the Department along the west side of Mesquite Springs Road, north of Amboy Road. This area is outside the City limits, but because of its close proximity to the City, a wildland incident could impact City residents. This area is also outside the Twentynine Palms Fire District but the Department responds to calls for service in this area through mutual aid agreement with the County of San Bernardino.

Section V

DISASTER PREPAREDNESS

The City uses the Standard Emergency Management System (SEMS) as mandated by the State of California. All City department heads and most second and third tier supervisors attend a week-long earthquake preparedness course presented by the California Specialized Training Institute. Emergency drills are conducted at least annually.

City Hall is equipped with an emergency generator and will be used as an Emergency Operations Center (EOC) in case of natural or technological disaster. The City's Public Works building and Patriotic Hall are also equipped with emergency generators and can provide emergency shelter or operational ability as alternates to the EOC if needed.

Communications in the EOC are provided by dedicated telephone lines that are activated when needed; computers are connected by the phone line to the County of San Bernardino EOC.

In the case of major disaster, the citizens of the community will need to be well prepared and oriented if chaos is to be avoided. The continued functioning of both police and fire during any catastrophe must be assured. The most probable events that would have a disruptive effect on the community are: radiation

accident, major transportation accident (such as an airplane crash), major fire, explosion, act of war, collapse of a public building during occupancy, and/or earthquake, flash flood or landslide of major consequence.

Section VI

EMERGENCY MEDICAL AID

Emergency medical response is provided by the Morongo Basin Ambulance, a non-profit organization licensed through the County of San Bernardino as an ambulance provider. MBA is the provider for medical aid and ambulance service in the City for response to 911 calls. Service is dispatched from Joshua Tree, but MBA has a satellite station on Adobe Road, south of Twentynine Palms Highway.

Section VII

CODE ENFORCEMENT

A. Dangerous Building Abatement

In addition to contributing to blight in the community, abandoned buildings often lead to vandalism and other unlawful activity. When in a state of deterioration, these structures pose a danger as well as a nuisance. The City's Code Enforcement Division has a program of dangerous building abatement in which inspections are scheduled and warrants are sought in cases where reconstruction is not viable or feasible. In cases where demolition of an abandoned building is not possible, Code Enforcement staff directs the boarding up of such structures to prevent unauthorized entry, vandalism, and illegal activity.

B. Trash, Refuse, and Junk

The accumulation of trash, refuse, and junk constitutes a safety hazard, creating vector problems, and/or increasing the likelihood of increased vermin and bacteria. The City's Code Enforcement Division works closely with County health officials, citizens and property owners to ensure that violations are remedied.

Code Enforcement efforts are reactive, responding to citizen inquiries and complaints and pro-active, seeking warrants to abate the most serious violations.

Section VIII**SEISMIC SAFETY****A. Seismic Mapping**

Seismic activity in the immediate region has been primarily the result of northwest and eastward-trending fault systems. In 1972, the State of California adopted the Alquist-Priolo Special Studies Zones Act, later renamed the Alquist-Priolo Earthquake Fault Zoning Act. The Act requires the State Geologist to prepare maps showing regulatory zones around active faults, within which local jurisdictions must require the preparation and submittal of geological reports for proposed development projects. Structures for human occupancy cannot be constructed within 50 feet of a known active fault.

B. Known Faults

The State of California, pursuant to the Alquist-Priolo Act, has provided the City with maps indicating the active earthquake faults in the community. There are two significant faults crossing the community, the Pinto Mountain Fault and the Mesquite Lake Fault.

- ! The Pinto Mountain Fault is a east-west trending fault, extending east and west of the City. It transects residential areas and parallels Twentynine Palms Highway throughout most of the westerly portions of the City. Total length is estimated by the California Department of Conservation to be 73 kilometers. The Pinto Mountain Fault is an active strike-slip fault with left lateral movement, capable of producing a 7.0 seismic event.
- ! The Mesquite Lake Fault transects, generally, less developed areas in the easterly and northeasterly portions of the City and is the major northwest-trending fault in the City and the surrounding area. Total length is estimated by the California Department of Conservation to be 88 kilometers. The Mesquite Lake Fault is an active strike-slip fault with right lateral movement, capable of producing a 7.1 seismic event.

C. Seismic Hazards

Seismic hazards include: surface ruptures, ground shaking, ground failures, seismic induced waves (although unlikely in the desert), mud slides, landslides and slope stability. Not all of these hazards would affect the City but are nonetheless addressed in Table II.

Table II SEISMIC HAZARDS	
Primary Seismic Hazards - Faults	Although not major faults, movement along either the Pinto Mountain Fault or the Mesquite Lake Fault could do extensive structural damage and could possibly alter the water table.
Secondary Seismic Hazards - Ground Shaking	An earthquake on the Mesquite Lake fault is capable of reaching the magnitude of 7.1 on the Richter scale and a seismic occurrence on the Pinto Mountain Fault could reach a magnitude of 7.0. The peak horizontal bedrock acceleration produced by a seismic event of this magnitude is estimated to be 0.64g, according to a seismic report prepared by Ninyo & Moore, <i>Geology/soil Conditions/seismicity</i> , 1990.
Ground Failures	The potential for structural damage is greatest in areas underlain by deep, soft, saturated soils and least in areas of hard bedrock. The extent of structural damage from earthquake vibrations is determined by five factors. They are: <ol style="list-style-type: none"> 1. The characteristics of the underlying soils and/or rocks, 2. Structural design, 3. The quality of materials and workmanship of the construction, 4. The location of the epicenter and magnitude of the earthquake, and 5. Duration of ground shaking.
Tsunami and Seiche	Due to the inland location of the City and the absence of any significant body of water, the danger or hazard related to this category is implausible.
Slope Stability	There is a hazard from ground shaking during an earthquake as rock slides can occur off of the mountains and hills in or adjacent to the City. Depending on the seismic circumstance, a potential rock slide could cause major damage to persons or structures.

**Section IX
FLOODING****A. Flood Control Facilities**

Major flood control facilities within the City are managed by the County of San Bernardino Transportation/Flood Control Department. The Department oversees operation and maintenance of the flood control facilities which traverse the City, including the Donnell Basin located north of Donnell Hill. Secondary facilities are the responsibility of the City.

B. Flash Flooding

The climate of the desert entails limited precipitation in the form of rain and sometimes, snow. However, it is not rare to have three-quarters of the annual rainfall occur in one single summer thunderstorm event. Runoff can be intense and can be heavily laden with sediment and debris which can be a primary cause of flood damage.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), dated March 18, 1996, identifies Special Flood Hazard Areas inundated by 100-year floods. These areas are identified as either Zone A, Zone AE, or Zone AO. Other areas of the City are identified as Zone X Shaded, these areas are either, 1) subject to inundation as a result of a 500-year flood, 2) areas subject to inundation as a result of a 100-year storm with average depths of less than one foot, or 3) with drainage areas less than one square mile. Other areas, those not depicted on the FIRM, may be subject to flooding from lesser storms.

Two large residential districts, the Smoketree area generally south of Flood Control Channel, and the Hansen Tract in the southeast portion of the City, are included in the AO zone. FEMA has identified potential flood depths in these areas as one foot.

Historically, the Downtown commercial area was subject to flood inundation. However, with construction of the Donnell Basin, much of the Downtown flooding has been abated and the Downtown is not within the flood zones identified on the FEMA Flood Insurance Rate Map. The County of San Bernardino Transportation/Flood Control Department has developed plans to improve and expand the Basin which will provide even greater protection for the Downtown.

Some commercial districts within the City are in areas identified on the FIRM as either AE or AO Zones. AO Zones, where the anticipated flood depth is one foot, include the north and south sides of Twentynine Palms Highway between Lupine Avenue and Mesquite Springs Road, the intersection of Utah Trail and Twentynine Palms Highway, and intermittently along National Park Drive. The only AE Zone with a commercial designation is along Amboy Road, east and west of Utah Trail; base flood elevation for this area is specified in the FIRM. Development is allowed in these areas, habitable structures are required to be elevated above the identified flood depth.

C. Master Plan of Drainage

In January 1997, NBS/Lowery Engineers and Planners of San Bernardino prepared a Master Plan of Drainage (MPD) for the San Bernardino County Transportation/Flood Control Department. The MPD included portions of the City and the surrounding drainage areas which contribute to the runoff. Flooding hazards and remedies are discussed in the MPD and it is used as a guideline for design of future flood facilities including channels, pipes, culverts, debris basins, detention basins and non-structural solutions.

D. All Weather Crossings

In the event of emergency, the ability for public service providers to reach a destination is critical. All weather crossings, which play a vital role especially during flash flooding, are located at the following locations:

1. Twentynine Palms Highway, just east of Lupine Avenue.
2. Mariposa Avenue, between Twentynine Palms Highway and Joshua Drive.
3. Larrea Avenue, just north of Twentynine Palms Highway.
4. Mesquite Springs, just north of Twentynine Palms Highway.
5. Adobe Road, between Buena Vista Drive and Civic Center Drive.
6. Utah Trail, south of Joe Davis Drive.
7. Amboy Road, east of Utah Trail.

Section X**TRAFFIC SAFETY**

One of the most serious safety problems in any inhabited area is that of traffic safety. Most of the problems are human behavior problems which can only be corrected through enforcement and/or education. However, the City can reduce the loss of life and property through elimination or mitigation of natural or created hazards identified in the City.

The safe and efficient movement of people and goods through and within the community is established as a primary objective of the Circulation Plan. In formulating decisions with regard to circulation design, consideration will be given to and compliance will be ensured with the standards established in the General Plan.

Section XI

HILLSIDE DEVELOPMENT

Types of development and their intensity shall be governed, in part, by slope with the degree of development intensity inversely proportional to the degree of slope. The intent is to limit disruption and alteration of the hillsides and avoid development of unsafe structures while accommodating acceptable levels of development.

Table III provides general guidelines in considering types of development which may occur in areas where slope stability could present risks.

- ! Permitted Uses are those that are appropriate developments within the stated category, if allowed per the Land Use Plan and the zoning regulations of the City.
- ! Special Uses are those that may be permitted, again subject to the limitations of the Land Use Plan and zoning regulations, when precautions are taken to prevent potential problems. Specific development review and/or slope stability studies may be required to ensure the integrity of the slope prior to development.
- ! Prohibited Uses are generally incompatible with the slope category identified. Prohibited Uses may only be allowed when slope stability studies provide sufficient conclusions that development can occur without significant risk potential.

Table III SLOPE/LAND USE			
Percent slope	Permitted Uses	Special Uses	Prohibited Uses
0 - 5	Agricultural, industrial, commercial, all residential uses, institutional-public uses	Very high and high density residential	None
6 - 10	Low to Medium density residential, agricultural	Neighborhood commercial, high density residential, institutional	General industrial, high density residential, general commercial
11 - 15	Low and medium low density residential, agricultural	Institutional uses, medium density residential	Most industrial and commercial, high and medium density residential

16 - 25	Agricultural, low density residential, open public uses	Institutional uses	All industrial and commercial, medium to high density residential
Over 25	Open space	Agricultural, recreational, low density residential	All other uses
* Restrictions placed on development contained in this table are offered as a general guideline. For specific allowable uses, see the Land Use Plan of the General Plan.			

Table IV identifies potential hazards of slope development and prescribes mitigation measures to be implemented.

Table IV DEVELOPMENT HAZARDS		
Development	Potential Stability Hazards	Measures to Minimize Hazards
Excavation and grading	<ul style="list-style-type: none"> ! Undercut slopes ! Over steepened slopes ! Fill placed on slopes ! Placement of uncompacted fill 	<ul style="list-style-type: none"> ! Minimal excavation and grading wherever possible ! Cut and fill slopes 2:1 or flatter depending on analysis of local conditions
Removal of vegetation	<ul style="list-style-type: none"> ! Increased saturation of soils ! Increased surface runoff ! Accelerated erosion and sedimentation 	<ul style="list-style-type: none"> ! Leave vegetation in tact wherever possible ! Plant appropriate vegetation on slopes and cleared areas
Alteration of drainage	<ul style="list-style-type: none"> ! Natural drainage concentrated in restricted areas ! Concentrated rainfall runoff from impervious surfaces resulting in accelerated erosion and sedimentation ! Increased saturation of soils 	<ul style="list-style-type: none"> ! Design development around natural drainage wherever possible ! Divert surface runoff away from slopes into natural or constructed drainage channels ! Design drainage systems with weirs, check dams and settling basins ! Install subsurface drains where necessary ! Minimize impervious surfaces
Construction	<ul style="list-style-type: none"> ! Inappropriate location of buildings, swimming pools, etc. 	<ul style="list-style-type: none"> ! Design and locate structures in accordance with properties of underlying soils and rocks, considering weight loading and water saturation effects ! Locate structures away from steep slopes

Section XII
GOALS AND POLICIES

A. Overview

The following goals are established for the Safety Plan. The purpose of each goal is established in this section. To facilitate each goal, policies are established and each policy is executed by one or more programs.

B. Goal #1

The City of Twentynine Palms will be a safe place to live and visit.

Purpose

Goal #1 states the primary purpose of the Safety Plan, the identification of safety ideals and agencies with responsibilities for ensuring their implementation.

Policy 1.1

Crime prevention will be a very high priority in implementation of the General Plan and citizens and visitors will have a feeling of security in pursuit of their endeavors whether on private or public property.

Program 1.1.1

Defensible space concepts shall be incorporated into multifamily residential projects; such designs will inhibit crime by improving the capacity of residents to visually survey the public areas of their environment.

Program 1.1.2

The City shall provide a satellite office at City Hall for efficient response of Sheriff's Department personnel.

Program 1.1.3

Through contract with the Sheriff's Department, the City shall support crime reducing projects such as Operation CleanSweep, the Choices Youth Program, the Juvenile Crime Reduction Plan and the Off-highway Vehicle Enforcement Team.

Program 1.1.4

The City shall support the efforts of the Citizen Patrol Unit which provide patrol to assists officers in carrying out their responsibilities in providing police protection.

Policy 1.2

The City, working in conjunction with the Twentynine Palms Fire Department, shall reduce risks of structural and wildland fires.

Program 1.2.1

As commercial, industrial and multi-family development is proposed, the City shall route proposed plans to the Twentynine Palms Fire Department for review and comment.

Program 1.2.2

Automatic sprinkler systems, early fire detection and alarm systems, adequate fire access, use of fire resistant materials, and availability of easily accessible emergency reporting systems shall be required per the Uniform Fire Code.

Program 1.2.3

The City shall encourage and support a public education and awareness program to reduce risks of wildland fires and to minimize fire hazards in the community.

Program 1.2.4

The City shall strive to improve the fire flow through cooperative actions with the Twentynine Palms Water District and Twentynine Palms Fire Department.

C. Goal #2

Risks from damage and injury as a result of natural occurrence will be reduced where possible and residents will be afforded protection to the extent possible from property damage and loss of life.

Purpose

The purpose of Goal #2 is to specify the City's role in providing a safe environment.

Policy 2.1

Hazards of rock slides and structure failure as a result of a seismic event shall be reduced where possible.

Program 2.1.1

The earthquake fault zones will be identified on the Alquist Priolo maps and information will be available to citizens.

Program 2.1.2

Hazards resulting from habitation and use of un-reinforced masonry buildings shall be minimized through appropriate retrofit measures designed to prevent collapse as a result of a seismic event.

Program 2.1.3

Construction of habitable structures within fifty (50) feet of a known fracture shall be prohibited.

Program 2.1.4

The City shall require certification of a structural engineer on all plans of buildings to be constructed within five hundred (500) feet of an earthquake fault (outside of the prohibited area identified in Program 2.1.3).

Program 2.1.5

For development of commercial, industrial, and multi-family units (of more than two units) within an Alquist-Priolo zone, at least three (3) test trenches shall be dug to determine the extent of the fracture and the potential for building collapse and liquefaction in case of a seismic event.

Program 2.1.6

The City shall maintain and activate an Emergency Operations Center following a significant seismic event in which there is potential for injury or significant property damage.

Policy 2.2

Hazard from flash floods shall be minimized to the extent possible.

Program 2.2.1

The City will coordinate with County, State and Federal authorities to continuously refine and update information on flooding and make all information available to residents and property owners.

Program 2.2.2

The City will provide information from Flood Insurance Rate Maps as development occurs and ensure that such development is in strict compliance with FEMA requirements.

Program 2.2.3

Proponents of larger developments will be encouraged to leave flood zone areas open and cluster the development on areas free from flood hazard.

Program 2.2.4

Drainage areas shall, whenever possible, remain in a natural open condition; when a channel is required for public safety, the design should be such to minimize the disruption of an area.

Program 2.2.5

The City will encourage the County of San Bernardino, Department of Transportation, Division of Water Resources include in the City portion of the Marine Corps Air Ground Combat Center in any future Master Plan of Drainage (MPD).

Policy 2.3

Minimal disruption and alteration of steep hillsides will be allowed and safety measures will be taken to stabilize slopes and prevent erosion.

Program 2.3.1

Grading permits should only be issued in conjunction with Building Permits; lot clearing and grading should only be to the extent necessary to accommodate an approved development project.

Program 2.3.2

Slope shall be considered in determining the degree of development intensity inversely proportional to the degree of slope.

Program 2.3.4

Special Uses, as identified in the Safety Plan, may only be permitted in a slope category when precautions to prevent potential problems are taken.

Program 2.3.5

Some uses shall be prohibited on steep slopes unless justified by the conclusions of a slope stability analysis.

D. Goal #3

The City shall develop a circulation network to safely move people and goods to and through the City.

Purpose

Goal #3 establishes the importance of circulation systems in dealing with emergencies and minimizing loss of life and injury.

Policy #3.1

New roads will be designed and constructed for efficient and effective emergency access.

Program 3.1.1

The City will ensure develop of roadways which comply with the adopted Congestion Management Plan for San Bernardino County.

Policy #3.2

Quality standards will be applied to all new and reconstructed roadways as development occurs.

Program 3.2.1

Streets will be constructed per standards established in the Circulation Plan when new projects are constructed or existing uses are intensified. Waiver of the requirements may only be made in developed areas where street improvements do not exist and when the proposed development will not result in increased traffic or alteration of drainage flows.

Program 3.2.2

To ensure quality standards, City Encroachment Permits and inspections will be required on all infrastructure improvements or modifications to City owned rights-of-way.

Program 3.2.3

Caltrans Encroachment Permits and inspections are required on all infrastructure improvements to Twentynine Palms Highway and must be obtained from Caltrans prior to construction.

Policy 3.3

Alternate transportation routes will be developed and utilized where possible.

Program 3.3.1

Signage for Truck Routes and Military Convoy Routes will be posted to increase utilization and avoid conflicts between automobile trips and the movement of products.

Program 3.3.2

Two Mile Road will be developed and improved as an alternate east-west route.

Program 3.3.3

Design will be completed and right-of-way will be secured for the extension of Amboy Road, connecting to Twentynine Palms Highway, as a future bypass route.

Program 3.3.4

The services of traffic analysis experts shall be sought to identify alternate east/west routes to relieve congestion along Twentynine Palms Highway.