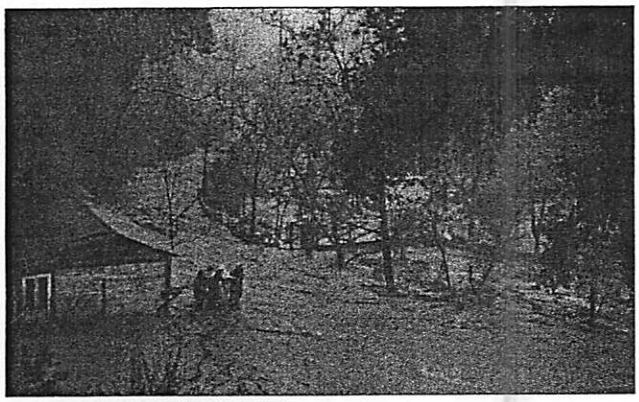
SECTION 4
FLOOD AND FIRE HAZARD PROTECTION

TOPANGA HISTORICAL SOCIETY



TOPANGA HISTORICAL SOCIETY

SECTION 4
FLOOD AND FIRE HAZARD PROTECTION

"Oh, I've seen fire and I've seen rain.
I've seen sunny days that I thought
would never end." – James Taylor

GOALS:

- Develop an integrated, environmentally sustainable strategy for reducing flood and fire hazards.
- Define the flood hazard problem in terms of potential harm to people, structures and the stream course/riparian habitat.
- Encourage all property owners in the watershed to contribute to flood and fire hazard mitigation.
- Reduce the flood hazard by implementing measures to reduce existing peak flow runoff.

Introduction

The Topanga Creek Watershed is shaped by catastrophic natural events that continue to define the watershed. Earthquakes, fires and floods all contribute to the evolution of the natural and built environment. Learning to live with impending catastrophe is a necessary fact of life for all residents. Taking precautionary measures when the winds are calm and sun shining can mean the difference between life or death.

The entire Topanga Creek Watershed is designated as a High Wildfire Hazard Area. Over 70% of the native vegetation covering the slopes of the watershed are classified as the northern mixed chaparral community, which is one of the most flammable plant communities on the planet. The Mediterranean climate that makes living in Topanga so comfortable, is also one of dry summers and wet winters, with fierce Santa Ana winds that can whip up flames reaching over 200 feet.

Flood events often follow the fires, when even a gentle rainstorm can mobilize the destabilized slopes causing damaging mud and debris slides. Even without a fire, the main roads, utilities and homes in Topanga compete for space in the narrow canyon floodplain. Road flooding and failures are common after a series of storms has saturated the watershed and the creek explodes out of its banks.

Several community organizations like T-CEP, the Topanga Canyon Firesafe Committee and Arson Watch coordinate disaster preparedness training and information. The recommendations in the Watershed Management Plan augments the solid foundation provided by these groups. Since the original Watershed Management effort was initiated with the intention of reducing flood hazards, additional detailed supplementary information can be found in the 1996 Draft Watershed Management Study.

FLOOD HAZARD

ACTIONS:

4.1 Compile annually a list of flood hazards and sites of potential slope failure.

4.2 Establish a twice annual monitoring schedule to identify problems before and after the rainy season. Coordinate with T-CEP.

4.3 Maintain and update annually the list of flood hazards, illegal dumping sites, and sites of potential slope failure. Support continued coordination of this effort between T-CEP, Caltrans, LA County Road Maintenance, etc. See also Streambank Protection and Transportation.

4.4 Identify appropriate solutions to the flood hazards and have the solutions approved by relevant agencies (i.e. Coastal Commission, US Fish and Wildlife, CA Department of Fish and Game, US Army Corps, etc.). Incorporate preferred solutions into County, Caltrans and other necessary procedures and code documents.

4.5 In accordance with County ordinances, remove any large debris that could create a flood hazard by obstructing the creek channel. See also Streambank and Channel Maintenance.

4.6 Establish and implement a cooperative program among all property owners and agencies for clearing stream obstructions. See also Streambank and Channel Maintenance.

4.7 Plan strategic placement of boulders on a stream-wide basis to reduce storm velocity during peak flow, based on hydrologic evaluation and in compliance with accepted Best Management Practices. See also Streambank and Channel Maintenance.

4.8 Monitor federal, state and local regulations to appropriately mitigate unsafe conditions (e.g. repetitive loss or substantially damaged buildings) within the floodplain.

4.9 Develop criteria for the siting and construction of detention basins. The primary purpose of these criteria is to insure that the impact of the basins on the riparian habitat is minimal.

4.10 Employ ponds to mitigate the increase in peak flow runoff and sedimentation engendered by the development of small parcels (e.g. grading a building site, building a house) and additions to existing residences and buildings (e.g. paving). See also Drainage.

4.11 Create a hydrologic watershed model that identifies undersized or poorly located/designed structures and provides guidelines for addressing inadequacies.

4.12 Prepare an inventory of the existing major hydrologic structures so that significant deficiencies can be identified and a plan made for their remediation.

4.13 Develop a set of general designs for embankment stabilization, flood walls, and other devices that may be needed to lessen the flood hazard at a particular location. These designs are to be specifically related to the situations encountered in Topanga, require little maintenance, and be consistent with the protection of the environment. Organize a Best Management Practices and Infrastructure Sub-committee.

4.14 Clearly define what agency is responsible for what actions.

Recommendations that require legal or political action:

4.15 Adopt an environmentally sensitive watershed management approach to flood hazard reduction, which is vital to protect life, property and the riparian habitat.

4.16 Establish practices which make reduction of peak flow runoff an important element in the selection of a grading and brushing procedure. See also Drainage.

4.17 Rescind LA County Designated Floodways in Lower Topanga, Garapito, Red Rock and Santa Maria Creeks and immediately implement the Topanga Creek Watershed Management Plan.

4.18 Ensure that the ability to protect existing property by modest and effective means is preserved through employing structures, such as gabion flood walls, that do not create downstream impacts.

4.19 Adopt the model State Floodplain Ordinance using FEMA minimum standards.

4.20 Flood hazard mitigation regulations should be applied alike to private property owners and public agencies.

4.21 Use a broader range of options in the Community Rating System program to reduce the flood hazard in order to benefit both public and private owners.

4.22 Pre-peak discharges should be evaluated using best estimate models rather than the worst case models currently used. See also Drainage.

4.23 An amendment should be made to the Local Annex to the State Flood Hazard Mitigation Plan to incorporate the Topanga Creek Watershed Management Plan.

4.24 Use a more empirical and holistic approach to define the boundaries of the 100-year floodplain.

4.25 Establish a policy in Los Angeles County of using a broader spectrum of soil conditions, including the existing vegetated condition of the site, to perform runoff comparisons between the developed and undeveloped site conditions proposed. See also Drainage.

4.26 Downstream property should be protected from increases in runoff due to upstream development by on-site retention efforts. See also Drainage.

4.27 All estimates of stream flow characteristics and elevations for watercourses in Topanga Canyon should be performed with hydrologic models that have been validated using data from Topanga Canyon.

4.28 Employ out-of-stream detention basins to reduce peak flow runoff in appropriate locations as determined within a comprehensive hydrologic analysis.

4.29 Ensure that all drainage plans specify that runoff is delivered to a natural drainage channel or public drainage device at non-erosive velocities with the fine sediments retained on-site. See also Drainage.

4.30 For those properties having impervious paving that exceeds the areas given under the following table, any increase in peak flow runoff and sedimentation (i.e. over the unpaved conditions) are to be mitigated on-site. See also Drainage.

4.31 Grading, road building, and any other practice which disturbs an area of soil over the limits specified in the table below, should demonstrate that any additional peak flow runoff and sedimentation (i.e. over the undeveloped condition) is mitigated and retained on site. See also Drainage.

Suggested Criteria which would trigger runoff mitigation measures:

Practice	Criteria
Paving	1000 ft^2, 100 ft^2 per acre
Brushing (clear cutting, disking)	3000 ft^2, 3000 ft^2 per acre
Grading	For volume: 1500 ft^3, 1500 ft^3 per acre For surface area: 1000 ft^2, 1000 ft^2 per acre

4.32 Assign the Topanga Creek Watershed Committee oversight over Caltrans and LA County efforts for insuring that flood hazard protection at one location does not increase the flood hazard at another.

4.33 Allow a lesser standard than the 50-year design storm where site conditions warrant. The need for the lesser standard must be demonstrated by a professional engineer and approved by the County.

4.34 Require that projects which alter the stream flow characteristics document their impact on downstream properties and mitigate any significant increases in flood hazard. See also Drainage.

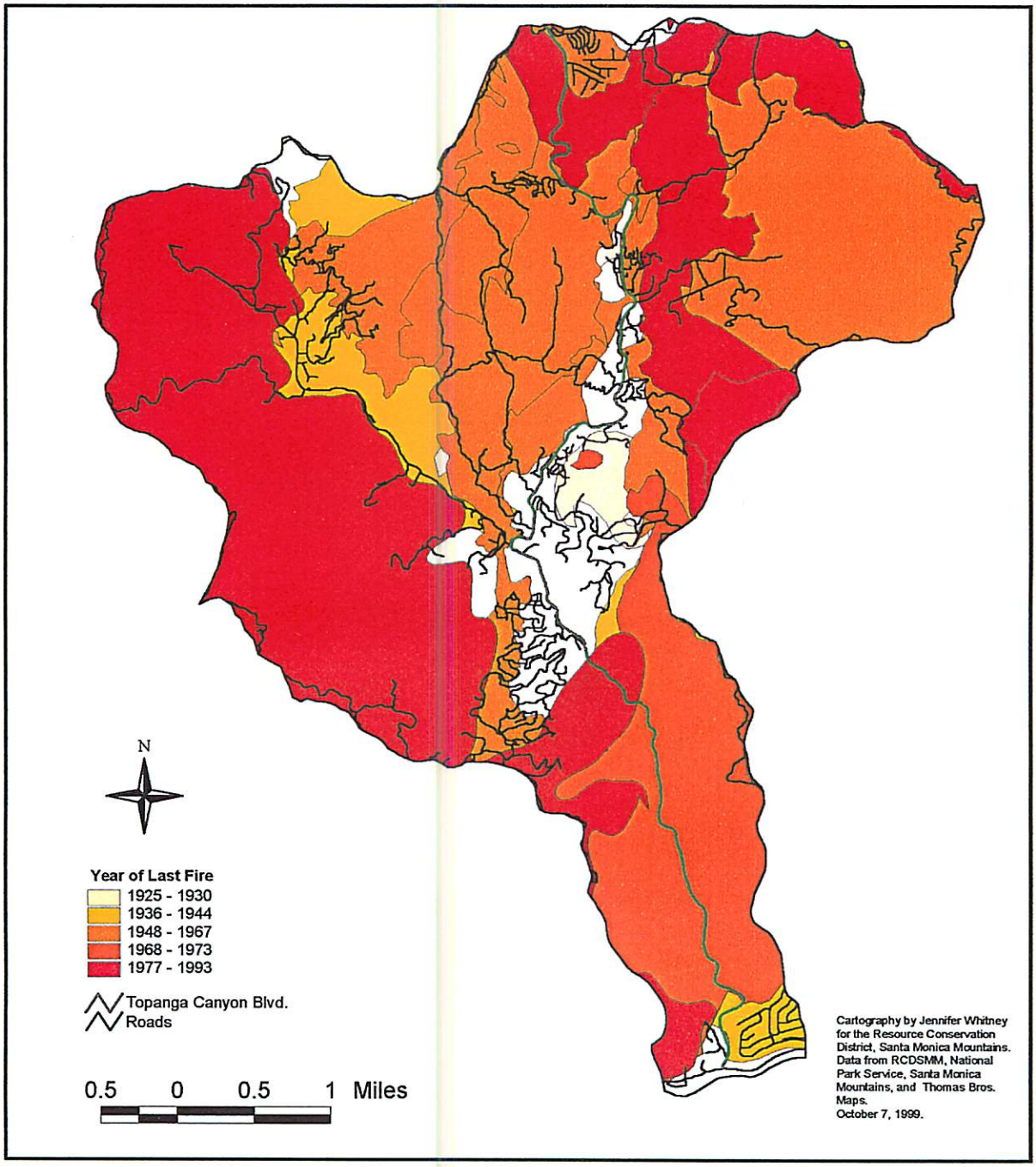
Priority actions or research that still need funding or further investigation:

4.35 Identify a funding mechanism for building detention basins, in accordance with comprehensive hydrologic analysis.

4.36 Assess existing serendipitous detention basins in Topanga (i.e. those formed by road fill of a side canyon) as to their present and long-term potential to act as detention basins. Prioritize the importance of each basin to flood hazard mitigation. Insure that these serendipitous detention basins are not destroyed by culvert upgrades and infilling.

Topanga Watershed

Fire History



FIRE HAZARD:

ACTIONS:

4.37 Reduce fire and flood hazard and catastrophic erosion and sedimentation by carrying out controlled burns, or other environmentally sensitive fuel modification strategies. Coordinate efforts with the Topanga Citizen's Firesafe Committee.

4.38 Continue management of road shoulder brush clearance for fire safety and line-of-sight without the use of herbicides. See also Transportation.

Recommendations that require legal or political action:

4.39 Brush clearance methods should be done so as to minimize soil disturbances by leaving a 4-6 inch stubble, leaving roots in place, and encouraging replacement of flash fuels like grasses with perennial natives which would require less clearance. See also Erosion Control.

4.40 Coordinate with the Topanga Citizen's Firesafe Committee and continue to require that the Fire Dept. review and approve landscape and fuel modification/vegetation management plans for all new developments and major remodels. No fuel modification plans should be approved that require greater than 30 feet vegetation clearance on slopes >3:1 (33%).

4.41 Require that the Fire Dept. and the Regional Planning Dept. evaluate all fire safety factors that affect the ability of a development site in the Santa Monica Mountains to survive a wildfire including: proximity to downhill slopes, time and distance from fire services; and adequate road access to and from the major roads that provide emergency ingress and egress to the site. Coordinate with the Topanga Citizen's Firesafe Committee.

4.42 Provide recommendations on zoning and code changes to the Board of Supervisors to allow comprehensive site evaluation of fire safety by the Planning Dept., to be implemented in conjunction with the fuel modification guidelines.

4.43 Where clear cutting or disking is used to remove brush over an area exceeding the limits specified in Table C-3, any additional runoff and sedimentation, which is generated over that due to hand brushing techniques, is to be mitigated on site.

4.44 Protect from harmful practices, like over- zealous brush clearance, trees and vegetation that reduces runoff and sedimentation, and increases absorption of rainfall.

4.45 Establish sufficient slope setbacks for new structures for fire protection; prohibit ridgetop development; allow only limited vegetation clearance on slopes greater than 3:1 (30 feet or less). All fuel modification and fuel management plans required under Section 11.702(a) of the Fire Code shall comply with these standards. See also Land Use

<u>Priority actions or research that still need funding or further investigation:</u>

4.46 Determine impacts of fire clearance on watershed. Require an Environmental Impact Report to be provided by Fire Dept. regarding impacts of regulations of brush clearance.

4.47 Identify ways to incorporate necessary erosion control with deeply rooted combustible native plant species. See also Erosion Control.

4.48 Determine impact of brush/slope clearance on native and locally sensitive species. See also Riparian Vegetation Protection.

4.49 Encourage CA Fair Plan, Los Angeles County Fire Department and the Topanga community to develop a feasible brush clearance plan that will not cause erosion. See also Erosion Control.

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Supplementary Information:

For a more detailed discussion of the information gathered by the Topanga Citizen's Floodplain Management Advisory Group, please refer to the 1996 Draft Topanga Creek Watershed Management Study.

Flood and fire hazard protection are one of main concerns of the Topanga Creek Watershed Management Plan. The impetus for watershed planning came as a result of community recognition that the piecemeal approach of the existing regulatory agencies failed to deal with several important points. First, the approach to floodplain management proposed in 1988 by the LA County Department of Public Works relied upon managing the flood risk by requiring all downstream properties to accept whatever flowed down the creek, without requiring a reduction of runoff at the source. Secondly, the designated floodways increase the risk to creekside properties and infrastructure by failing to regulate reduced inputs and relying solely on removing the infrastructure from the floodway. In Topanga, the largest impacts are on both state and county roads, the majority of which are located within the floodway, Relocating these roads out of the floodway is not possible. The impact to the riparian vegetation and streambank stability is severe. The community clearly saw a need for a different approach.

The 1980 flood highlighted the problems. Millions of dollars worth of roads, bridges, and utilities were damaged. Topanga Canyon Blvd. (State Highway 27) was closed for almost 6 months for repair. Access to homes and businesses in the entire community were threatened. Acres of riparian habitat were damaged. Since 1980, the population in Topanga has doubled, which means that an even greater amount of damage could be expected in the next severe flood event.

The Topanga Creek Watershed Management Plan offers an alternative to designating floodways by providing a blueprint of actions and guidelines that will help reduce the source of peak floods and the impacts that these flood events will have on the community. Implementation of coordinated streambank stabilization which retains a buffer zone of mature riparian vegetation, avoiding and reducing the amount of channelization of the creek, utilization of on-site drainage retention systems, environmentally sensitive fuel modification for fire safety, and installation of mini-detention basins are all ways to reduce the flood hazard that are proposed by the Plan.