



# **CITY OF PHOENIX**

## **Comprehensive Land Use Plan**

### **NATURAL DISASTERS & HAZARDS**

**August 20, 1984**

**Salem**

**As Amended**

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SECTION VII.  
NATURAL DISASTERS & HAZARDS

CONTENTS

Introduction..... 1  
Flood Hazards..... 1  
Slope Hazards..... 2  
Hazard reduction policies..... 3

FIGURES & PHOTOS

Figure 1 ..... 4

## SECTION VII.

### NATURAL DISASTERS & HAZARDS

#### INTRODUCTION

Statewide planning goal #7 is:

*“To protect life and property from natural disasters and hazards.”*

The State planning also guidelines also state, “Development subject to damage or that could result in loss of life shall not be planned nor located in known areas of natural disasters and hazards without appropriate safeguards. Plans shall be based on an inventory of known areas of natural disasters and hazards.”

Areas of Natural Disaster and Hazards are defined as:

*“Areas that are subject to natural events that are known to result in death or endanger the works of man, such as stream flooding, ocean flooding, ground water, erosion and deposition, landslides, earthquakes, weak foundation soils and other hazards unique to local or regional areas.”*

The only significant type of potential hazards in the Phoenix areas is flooding along Bear Creek and its tributaries. To a lesser extent, there are hillside areas in the Phoenix area that may have hazards associated with steep slopes. Flood and slope hazards are emphasized in this section of the Plan and the Plan will be updated later to include other hazards or potential natural disasters, if any are identified.

#### FLOOD HAZARDS

The primary area of potential flooding is the flood plain of Bear Creek. To a lesser extent, the flood plains of Coleman Creek and Anderson Creek have flooding potential, as may other smaller tributaries of Bear Creek. The Department of Housing and Urban Development (HUD) has delineated the flood plain areas of Bear, Coleman and Anderson Creeks and has identified the various hazard zones with respect to flooding potential. These maps are available at City Hall and are used during the site plan review process and for general planning purposes.

Flood plain areas are to be used in a manner which is consistent with the guidelines of the HUD Flood Insurance Program. Any property which is developed within the identified flood plain areas of these creeks must comply with the Flood Insurance Program’s requirements. Furthermore, the site plan review of the City helps to ensure that any development in the vicinity of other small creeks or drainages is designed and located to be safe from any potential flooding of those tributaries.

When a project is identified as being within a flood plain in the City of Phoenix, there is careful coordination between the City's engineer, planner, and building official in its review, and a determination is made as to whether or not the property is actually within the flood plain. If the property is found to be within the flood plain, mitigation measures must be provided to protect the structure(s) and to meet the requirements of the Flood Insurance Program.

The channel of Bear Creek itself is considered a floodway. No encroachment into this floodway area can be made by structures, fill, barriers, or any other obstacles that might restrict the flow of water through the channel. This potential problem has been minimized by the Bear Creek Greenway program which has brought about the public acquisition of nearly all lands that lie within the Bear Creek environmental corridor, including flood plains. Jackson County adopted a master plan for the Bear Creek Greenway in 1982 which provides for a variety of future uses, including recreation, open space, and natural preservation of the environment. Although the greenway is almost entirely in public ownership and not likely to experience any pressure for development, the City has included the Greenway area in a separate zoning district to provide additional protection and local control. The Bear Creek Greenway (BCG) zoning district is consistent with the County's recreational and preservation plans for the area and will allow limited use of the area in accordance with the Greenway master plan.

#### SLOPE HAZARDS

There are two areas within the Phoenix Urban Growth Boundary that contain slopes that are extensive enough to be included a potential hazards. One area, a portion of which is already within the City, is at the south end of the planning area. The majority of the north side of this hill has already been developed as a low-density residential neighborhood within the City limits. The remainder of the hill is very similar in its slope and geology and is planned for similar development. With proper engineering and construction, there should be no slope hazard in this area of any significance.

The other slope area is on the hillsides east of the freeway in the southeastern portion of the Urban Growth Boundary. This area is mostly undeveloped, consists of grasses, rock outcroppings, and is partially wooded. Two large single-family homes are located at the top.

The primary soil of type of these hillsides is Brader-Debenger Loam, which is shallow to sedimentary rock. According to Jackson County soil scientist Dave Mauer, these areas could be developed without too much hazard concern, provided the engineering is done properly, cut and fill is kept to a minimum, and roadways follow the contours of the hillsides as much as possible. These slopes are considered to be stable and not subject to slide, slump, undue residential land uses are proposed on these hillside areas and such development will occur at densities somewhat lower than normally found on flatter terrain. Larger lots or "planned unit developments" should be considered for the more severe slope areas and the property should be developed consistent with the environmental limitations found in these areas.

There are no known soils within the planning area of Phoenix that cannot be safely used for urban development. Clay soils exist in some locations and will require special consideration to meet foundation and construction requirements. The City's building official should require an engineered foundation when he feels the clay soils may have an adverse impact on the structure, or when they are encountered on hillsides. In nearly all cases, clay soils are not found on the hillsides in significant amounts and they are not expected to pose any obstacles to development.

The map on the following page provides a general indication of areas having potential flooding or slope hazards.

### HAZARD REDUCTION POLICIES

The following policies are directed primarily toward the identified "potential" hazards of flooding and steep slopes within the Phoenix UGB:

1. The City shall refer to the National Flood Insurance maps when evaluating any proposed development or land use that may be within a 100 year flood plain, or other area having flooding potential.
2. The City shall encourage land uses within the Bear Creek Greenway that are compatible with the floodplain and natural environment, and that are consistent with the intent of the Greenway program, as outlined in the County's master plan for the Greenway and are in accordance with the City's BCG zoning district.
3. The City shall encourage land uses in flood prone areas that do not include major structures or otherwise, and that will not require protection through the use of dams, dikes, levies, or other artificial means.
4. The City shall encourage and require, when necessary, the preservation of trees and natural vegetation along Coleman Creek, Anderson Creek and the smaller drainages in efforts to minimize erosion and sedimentation, to maintain animal and bird habitats, and to enhance the beauty and aesthetic quality of the community.
5. The City will continue to comply with the requirements of the Federal Flood Insurance Program and related City ordinances.
6. The City shall encourage any development on hilly terrain to take special care in the retention of natural vegetation, to minimize grading, to follow the contours of the land, and to take any other precautions that will ensure stability and minimize erosion hazards.
7. The City shall require a drainage plan for all hillside development to ensure adequate drainage with minimum hazard to downhill properties.
8. The City will continue to monitor community safety and periodically update this section of the Plan as new information is made available.

Figure 1

