



FRAMEWORK FOR RECOMMENDATIONS

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This section describes the growth of the city of Juneau and influences of geophysical hazards on community development. It places findings of the Geophysical Hazards Investigation into a planning and land use control framework; and recommends alternative actions to the Borough Assembly as it deals with the problems of land use and community development in hazardous areas.

A Juneau History

Discovery of gold in 1880 and resultant mining activities created the city of Juneau. Topography restricted early physical growth to the narrow, relatively flat area along the waters edge, backed by the steep slopes of Mt. Juneau and Mt. Roberts. Street and building locations were determined primarily by convenience to the mining sites, availability of materials and transportation. Poor roads limited access to areas outside the immediate environs of the city. Until recent years, much of the growth of the city has continued within the original city limits.

A significant change occurred in 1900. As a result of the move of the state capital site from Sitka, Juneau was established as a permanent city. Greater capital investment was required to provide the buildings and ancillary spaces required for governmental functions. The permanent residential population increased, less accessible land was developed and the community expanded further.

B. Community Development and Geophysical Hazards

Historically, the existence of any geophysical hazard has been a minor factor in determining the development and growth of a city. Disastrous events are not completely predictable, and long periods of time may elapse between disasters of major proportions. Consequently, people tend to either ignore or forget the existence of such hazards.

Community development generally occurs on sites which can serve the functional needs of a society. Cities are generally established because of proximity to good harbors, trade routes, market areas, natural resource deposits, etc. Development patterns are established early. As the community grows to maturity, it becomes increasingly difficult to modify the course of development once established. The city of San Francisco is an example. Developed as a trade center serving both the interior of the United States and the Orient, the city was virtually destroyed by the 1906 earthquake and fire. Despite the ever-present danger of another catastrophic earthquake, the city was rebuilt and continues to flourish on the same site.

Extensive development also has occurred along the San Andreas Fault in California. Development continues despite all scientific evidence which indicates that a severe earthquake of catastrophic proportions will in all probability occur sometime in the future, causing extensive losses of life and property.

Three elements affect community planning.

1. Cultural

Cultural influences on community planning are difficult to define because they exist in the value system which establishes goals. Nevertheless, they exert a significant force in the shaping of a community. Communities whose cultural values are similar will generally have similar patterns of growth.

2. Physical

The physical element imposes controls and limits to community development in very obvious ways. Topography, soil conditions, flood plains, water tables, all impose certain kinds of constraints and conditions upon land use patterns and development.

3. Public Welfare

Land use planning and development regulations derive their authority from community held concepts about public welfare. The belief is that the regulation of uses of land to achieve community goals and that the control of development to maintain certain standards will insure the health, safety and well being of citizens as well as promoting a well balanced and attractive community for the benefit of all. The issue, which is applicable to Juneau, is to deal with the existing geophysical hazards as related to land use planning and public welfare. This Summary Report sets forth the nature, extent and location of the earthquake, mass wasting and snow avalanche hazards affecting Juneau. The Technical Supplement presents the work and findings of the

consulting teams engaged in this investigation, as well as reports of related investigations which were done in the past. Now these technical findings must be translated into action which will permit the Planning Commission and Borough Assembly to make decisions concerning the use of land in the hazardous areas of Juneau.

Not all natural hazards prevent development. Policies have been established, and legislation enacted, to bring about public works projects to mitigate the disastrous effects of some natural hazards.

The national policy for funding of flood control projects under the auspices of the Corps of Army Engineers and the Flood Plain Insurance Subsidy Program are two examples. The series of dams, dikes and levees constructed to control the rivers of the United States has made available a large amount of land for use which had been heretofore unsafe. However, there is no reasonable way to make this land totally safe from flooding. Consequently, communities have imposed certain flood plain land use controls upon development of flood prone land.

Seismic hazard zoning and building regulations such as those included in the Uniform Building Code are another example of the policies which influence the extent and type of development. Though not so dramatic as flood plain zoning in terms of land use development and control, communities adopting UBC

regulations dealing with the construction and design of buildings in earthquake prone areas are recognizing an existent danger, and attempting to deal with potential loss of life or damage to property.

On the other hand, the inability of communities to act effectively and adopt the necessary legislation which can prevent development of hazardous areas can have far reaching consequences. A case in point, which is directly applicable to Juneau is the Yodlin disaster of Sunday, January 24, 1971, at Stevens Pass in Chelan County, State of Washington. Four people were killed and six injured when a snow avalanche struck an area where about forty vacation cabins were clustered. The recreational development had been allowed to be built despite reported warnings that the area was prone to avalanches. As a result of the disaster a suit for damages has been filed against the Board of County Commissioners and the Planning Commission of Chelan County, Washington. The plaintiffs contend that the governing body is liable for damages for allowing development to occur in an area which was known and documented to be susceptible to snow avalanches.

Altering land use patterns is by no means an easy task in an established community. The patterns have been set, improvements made and a vested interest developed. Changes or the imposition of stricter land use controls invariably become a controversial issue.

Other factors influencing zoning and planning decisions, such as cultural dictates, community design philosophy, or economics may be changed. However, natural hazards, for the most part, cannot be changed by man's actions. The application of land use controls based on known natural hazards thus assumes prime importance.

The following section offers a series of recommendations which, if incorporated into existing land use control and development regulations, would constitute a body of legislation recognizing and dealing effectively with geophysical hazards.