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The Decision and Rationale which Led to Construction on High-risk Land after the 1964 Alaska Earthquake: Analysis of Risk-based Cultural Dissociation

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THE DECISION AND RATIONALE WHICH LED TO
CONSTRUCTION ON HIGH-RISK LAND AFTER THE
1964 ALASKA EARTHQUAKE:
ANALYSIS OF RISK-BASED CULTURAL DISSOCIATION

by

SHEILA ANN SELKREGG

A dissertation submitted for partial fulfillment of the
requirements for the degree of

DOCTOR OF PHILOSOPHY
in
URBAN STUDIES

Portland State University
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DISSERTATION APPROVAL

The abstract and dissertation of Sheila Ann Selkregg for the Doctorate of Philosophy in Urban Studies was presented November 2, 1994, and accepted by the dissertation committee and the doctoral program.

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ABSTRACT

An abstract of the dissertation of Sheila Ann Selkregg for the Doctor of Philosophy in Urban Studies presented November 2, 1994.

Title: The Decision and Rationale Which Led to Construction on High-Risk Land After the 1964 Alaska Earthquake: Analysis of Risk-based Cultural Dissociation

Many lives and much property are lost in disasters when individuals and communities choose to ignore information which could mitigate the potential disaster. This case study examines community and individual decision processes and rationale which led to construction of a high-occupancy high-rise courthouse on land designated as high risk after the 1964 Alaska earthquake. The study reviews policy and decision making, psychology, and risk management literature to explore the psychological mechanisms and processes of hazard mitigation decisions.

It questions why individuals and communities choose not to mitigate when they have the information which makes risk mitigation possible. The hypothesis theorizes risk-based cultural dissociation and submits that individuals and society process risk-related information in a manner that allows for interpretation and acknowledgement of information so that it is compatible with individual and social agendas and constructs. Society and individuals can and do completely deny or dissociate from risk-related information

This exploratory research uses macro, meso, and micro levels of analysis to examine the environmental setting, land ownership and power, and professional and public seismic information. This examination is placed in the context of Anchorage's post-earthquake reconstruction momentum.

Indepth interviews with elected officials, a bank president, insurance executives, investors, builders, appointed officials, private and public professionals, court representatives, a judge, a juror, and citizens provide insight into risk perception and individual and community agendas. The interviews revealed each level of analysis had different perceptions of risk and different agendas.

Professional warnings not to reconstruct on high-risk land were ignored. Downtown economic interests and powerful individuals significantly impacted the community decision process. One charismatic leader played a major role in the community reconstruction and courthouse decisions.

Research findings support the hypothesis. Individuals consistently chose to deny earthquake potential in their daily lives. Selective interpretation of information allowed individuals to support their own agendas. Community decision processes allowed deletion of important information and a transference of responsibility, resulting in no decision body or individual

feeling responsible for the decision. Risk-based cultural dissociation is defined and presented in this research as a direction for future study.

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CHAPTER 1

INTRODUCTION

This dissertation analyzes the decision-making process and rationale which led to construction of a multistory, high-occupancy court building on land in downtown Anchorage, Alaska, classified as high risk after the Great Alaska Earthquake of 1964. It is a case study of the 12-year preconstruction record and includes interviews with key participants involved in the courthouse site decision process. This research places the courthouse decision in the broad physical, sociopolitical, and historical contexts of the community decision to reconstruct on high-risk land after the earthquake. It asks why the decision makers chose to place a high-occupancy public building on land that has a potential for ground failure in a major earthquake when Anchorage has a clear history of seismic events.

Chapter 1 presents the hypothesis and a discussion of the case study topic and gives a brief overview of the reconstruction decisions which followed. It outlines the political, economic, professional, and governmental response to seismic issues in Anchorage.

Chapter 2 reviews a broad spectrum of literature, including policy and decision making, psychology, and risk management. It focuses on information

that assists in explaining how and why individuals process decisions regarding risk-related information.

Chapter 3 presents the research design. It explains the qualitative exploratory nature of this research. It also presents the interviewing technique and approach used in the study. This chapter also introduces the macro, meso, and micro framework used to analyze the research data. Finally, it includes a procedural outline of the tasks associated with the completion of the research.

Chapter 4 uses the macro, meso, micro framework to present a large body of information associated with the research question. This framework sets the analysis of the information into a broad community context. The information is divided into four topics: (1) Environmental Setting provides an explanation of the potential earthquake risk in Anchorage. It also examines state, local, and courthouse site-specific, seismic-related information; (2) Land Ownership, Power, and Reconstruction presents a description of the economic, social, and political context which influenced the reconstruction of downtown Anchorage after the earthquake. This chapter also looks at that context in regard to the courthouse addition; (3) Information Backdrop presents general earthquake risk information in the Anchorage area. The intent of this section is to present the extent to which Anchorage residents are informed about the hazards of living in a high-risk region. This section includes scientific reports

and expert comment. The information is site specific to Anchorage regarding very high-risk land designed along specific bluff areas which have a potential for ground failure in case of an earthquake. It also presents a review of information used in the decision process specifically associated with the courthouse addition; (4) Decision Participants identifies individuals who participated in or influenced the courthouse addition decision process. It divides these individuals into the macro, meso, and micro levels of influence.

Chapter 5 introduces the individuals to be interviewed. It outlines the question focus areas and framework used in the open-ended interview process. Chapter 6 presents the individual interviews. They broadly fall into macro level issues of power, politics, and money; meso level issues of technical information and review; and micro level issues of faith and individual effectiveness.

Chapters 4 and 6 present important information and portray different dimensions of the decision process. Combined they express the individual, social, and political constructs which influenced the decision process.

Chapter 7 summarizes the research findings in Chapters 4 and 6 and analyzes those findings in relation to the literature. It evaluates the hypothesis as well as the research. Finally, it draws conclusions from the findings and identifies possible future research.

DESCRIPTION OF THE TOPIC

This dissertation examines the process and rationale which led to the decision to construct a public building on land designated as high risk after the 1964 earthquake. The six-story courthouse addition, currently under construction on the block between H and I streets and Third and Fourth avenues in downtown Anchorage, is adjacent to two major 1964 earthquake slide areas. It has been designated as a high-risk site with the potential for ground failure if another major earthquake occurs in the Anchorage area (Municipality of Anchorage 1979; Miller and Dobrovolny 1959; Mitchell, Huston and Yamane 1973; U.S. Geological Survey 1966). The building is designed to facilitate daily operations of the state court system. It will provide space for public access to services, judicial courtrooms, offices, and support services as well as space for prisoner transport, security, and holding cells.

The building design underwent at least 10 major redesigns over 12 years to meet requirements set forth in plan review and to satisfy financial constraints. Extensive review and analyses of this project have been ongoing and spawned more than 3,000 pages of public records, reports, and related information. This study examines the record and places it in a broad physical, social-political, and historical context. That examination includes the review of

approximately 8,000 pages of related information. It presents interviews with key participants associated with the decision process to provide insight into how and why the decision took place. It is assumed from the outset that there are not necessarily "good or bad" forces behind the decision but rather different ways of interpreting and processing the same information. The study builds on a large body of literature, including policy and decision making, motivational and social psychology, and risk management and hazard mitigation.

This topic requires a qualitative exploratory research approach which draws on ethnographic techniques often used in anthropology. The analysis is neither subjective nor objective, but rather interpretive, in an effort to mediate multiple views. The topic is explored using a macro, meso, micro informational structure, which allows for analysis of the major factors that affected the decision (Palm 1990).

SIGNIFICANCE OF THE RESEARCH

The 1964 Alaska earthquake is only one event in the continual chain of natural hazards occurring on Earth. In addition to natural disasters, technological disasters have been on the increase during the last 20 years, including toxic waste, pollution incidents, oil spills, nuclear plant accidents, and toxic chemical leaks (Palms 1990). As problems become more complex,

and population and information expand, the importance of human decision making in relation to natural and technological hazards becomes more apparent. Volumes of literature exist which identify, analyze, and recommend ways to develop policy which will mitigate potential hazards.

Yet, even with the excellent information and mitigation proposals, individuals and societies often choose to ignore potential risk and continue life patterns that result in devastating outcomes in the predicted event of disaster. The loss associated with natural disasters indicates that we need to explore why we do not implement identified precautions which reduce loss of life and property (Burton, Kates, and White 1978; Petak and Atkisson 1982; Fischhoff et al. 1981).

Examples of anticipated natural hazard loss are commonly reported in the media. On September 18, 1985, Colombia's Nevado de Ruiz volcano erupted. It melted ice and unleashed torrents of mud that buried 25,000 people. A week before scientists had provided a map to officials showing exactly where the muck would flow. The volcano spewed ash two days before the eruptions. The map was published in the paper. There was no evacuation order. Survivors of the event complained that they weren't warned. U.S. Geological Survey volcanologist Robert Tilling stated, "That shouldn't have

happened. The whole emergency response network failed and as a result thousands died" (*The Anchorage Times*, 26 Feb., 1989, p. C-5).

At least 24,000 people died in the December 7, 1988 earthquake in Soviet Armenia. This area has been known for its deadly earthquakes for centuries. The Communist Party newspaper *Pravda* stated, "Geophysicists more than once warned builders of the high seismic activity in northwest Armenia." Yet when the event occurred, thousands were entangled in the collapse of adobe huts, stone homes, and poorly reinforced concrete slab buildings. *Pravda* asked, "Who closed their eyes to the warnings of the seismologists?" (*The Anchorage Times*, 26 Feb. 1989, p. C-5).

In the 1985 earthquake in Mexico City approximately 1,000 buildings collapsed, killing 10,000 people. Thomas Hanks of the U.S. Geological Survey points out that scientists and engineers knew that seismic waves would be amplified due to the lake bed which lay under the city.

The list of predicted disasters which have resulted in tragedies goes on and on. Don Miller, U.S. Geological Survey scientist, told a group of two hundred officials at the national "Geohazards '88" symposium, "It's not enough to assess hazards. Something has to be done with this information." In 1984 the National Research Council estimated that in the previous 10 years earthquakes, landslides, tidal waves, tornadoes, floods, wildfires, and volcanic

eruptions had killed more than 2.8 million people and done \$100 billion in damages worldwide. We have the knowledge to substantially reduce future loss of life and property. The question is why are we not doing it? (*The Anchorage Times*, 26 Feb. 1989, p. C-5).

Hazard risk assessment and the public decision process involve a complex weaving of scientific information with individual and social behavior. To understand the process one must examine the information and behavior thoroughly and carefully. The review of the record and the insights offered in the interviews has resulted in a thorough, careful examination of one case. The findings are evaluated against a broad scope of literature in an effort to explain why the individuals and the community made the choices they did. This study is designed to provide insight into the risk-management decision process that can be applied to other hazardous situations.

HYPOTHESIS

The following three hypotheses combine to build a theory of risk-based cultural dissociation which is the premise of this research.

1. Individuals process risk-related information in a manner that allows for interpretation and acknowledgment of information so that it is

compatible with personal agendas and emotional and intellectual constructs.

2. Private and public decision systems are designed to allow for the recognition, interpretation, and inclusion of information so that information is compatible with personal and social agendas and constructs.
3. Individuals and society manifest culturally dissociative behavior to the extent that we are capable of blocking out or repressing true risk-related information which is incompatible with our cultural constructs and agendas, even when that information is essential to our safety and presented in our public view.

This research is not designed to prove cultural dissociation. Nor is it designed to explain precisely how individuals process information. It examines one situation in which a community chose to build a high-occupancy public building on land which was clearly designated to be high risk after a major earthquake. The research is intended to explore the problem and place that exploration in relation to potential explanations for individual and community behavior. The premise of risk-based cultural dissociation does not appear in the literature and is submitted for exploration and defined for future study.

Individuals process risk-related information in a manner that allows for the interpretation and acknowledgment of information so that it is compatible with the personal agendas and emotional and intellectual life constructs. This concept is supported in the literature by theories such as Cognitive Dissonance, Attribution, Bolstering, and Expectancy. Each of these theories is reviewed in this study (Janis and Mann 1977).

Private and public decision systems are designed to allow for the recognition, interpretation, and inclusion of information so that information is compatible with personal and social agendas. The theories of Group Think, Cultural Dissociation, and Social Traps reviewed in this research each contribute to the understanding of this behavior. The theoretical work done by Miller and Starr (1967) also contribute to this theory.

A review of the literature indicates that the concept of culture dissociation has not previously been applied to understanding behavior associated with risk mitigation (Janis 1972; Platt 1973; Ross 1991; Braum 1988; Squire 1987). It is my belief that individuals and society are capable of processing risk-related information in a manner which redefines or ignores information which is challenging to the cultural and individual construct. I submit that humans manifest dissociative behavior to the extent that we block out information that is incompatible with our life construct, or social

paradigms. This behavior occurs even if its consequences result in disaster and even if the information is present and apparent in the individual and public review process. The information is not received or is overlooked by conscious thoughts. It is repressed. Our community decision structures often reflect unspoken cultural values that support the dissociative process.

An extreme form of individual dissociative behavior results in multiple personality disorder. To varying degrees the community and society function like a multiple personality in that each aspect of the societal personality functions as if it were whole and knowledgeable yet totally forgets or represses the values of other societal forces. This concept is addressed by Ross's (1991) work on the dissociated executive self and cultural dissociation.

The theory of Cultural Dissociation could be applied to understanding why citizens of Germany and Europe did not acknowledge the extermination of the Jews during World War II when there were reports of the situation. Or why many Americans have had difficulty recognizing the relationship between increased television violence and increased incidences of violent behavior. Or why we are slow to acknowledge the relationship between the number of guns per capita and the number of gunshot deaths per capita.

On a smaller scale dissociation could shed light on why the managers and engineers who were involved in developing the space shuttle Challenger

identified the potential disastrous implications of the design failure of the O-rings early in the design process but chose to continue to use them in the space craft (Presidential Commission on the Space Shuttle Challenger Accident 1986). Or why Alaskans who were aware of the high potential for a major oil spill at sea were unprepared for the spill that occurred in Prince William Sound in 1989 (Alaska Oil Spill Commission 1990; Lord 1992). These two situations are very different, yet they share a common thread: obvious information indicating potential disaster was available but overlooked or ignored.

OVERVIEW OF THE 1964 ALASKA EARTHQUAKE

The Event

On March 27, 1964, at 5:30 p.m., the people of Anchorage, Alaska were moving at a slower-than-usual pace. It was Good Friday; schools were closed and the business day was winding down for Easter weekend. A light snow was falling, and the sky seemed heavy and close in. Suddenly, preceded only moments before by the sound of moving earth, Anchorage was fiercely rocked, tugged, rolled, and jarred by the second largest earthquake ever recorded.

Glass shattered; walls wrenched, cracked, and fell; and buildings collapsed throughout Southcentral Alaska. Blocklong sections of the main street in downtown Anchorage dropped 4 to 8 feet, creating a huge, wedgelike

crevice down the middle of the street. In some places waves of earth three feet high rolled across the landscape. A neighborhood named "Turnagain by the Sea" slid apart as sand, silt, and clay layers under the earth liquefied. Large chunks of surface ground cracked off the bluff and flowed towards Cook Inlet. Houses shifted off foundations and fell into large grabens (crevices). Children and adults struggled to avoid being crushed by the massive movement of earth.

The quake was reportedly felt throughout the state, and it was recorded worldwide. Five to seven minutes after the quake a seismic wave vibrated the entire Earth. It damaged ground and structures over thousands of square miles. Ice on rivers and lakes cracked and ruptured across 100,000 square miles (USGS 1966).

One hundred and fourteen Alaskan lives were lost. Transportation, communication, and the state's economy were completely disrupted. A seismic wave moved across the Pacific Ocean from the Gulf of Alaska to Antarctica. Unusually large waves were recorded all the way to the Gulf of Mexico. Towns in British Columbia and California were hit by a tsunami, and four people were killed in California when the wave smashed into the coast (USGS 1966).

The earthquake measured 9.2 magnitude and 8.7 on the Richter Scale. The epicenter, located in one of the five major fault systems affecting southcentral Alaska, lay 80 miles east-southeast of Anchorage on the south side

of the Chugach Mountains. Energy was released along many miles of a broad area south-southeast of the epicenter beneath and adjacent to Prince William Sound and the Gulf of Alaska. Twenty-eight aftershocks occurred in the 24 hours following the earthquake. Ten of those shocks exceeded magnitude 6 on the Richter Scale (USGS 1966).

Anchorage began to dig itself out the day after the earthquake. Slowly, stories trickled in from Seward, Valdez, Kodiak, Seldovia, Homer, Cordova, and Whittier. In Seward and Valdez large submarine landslides and land subsidences destroyed the cities' industrial waterfronts. In Valdez the ground subsided and the dock dropped and disappeared, only to be replaced by the massive rush of water created by a huge landslide triggered by the quake. The town was totally devastated. Valdez eventually relocated to a site about a mile away. Land subsidence in Kodiak, followed by the massive impact of a major tsunami, destroyed the entire commercial heart of the community. In Cordova land uplift left the small-boat harbor, city docks, and other waterfront development unusable. Homer's industrial waterfront was destroyed. The port at Whittier was ravaged by a series of tsunamis that swept away property and people.

The time of day and the fact that many schools and offices were empty kept Anchorage's losses relatively low. Only eight people were killed. Almost

everyone else considered themselves lucky. Had the earthquake occurred at night or on a regular school/business day, the death toll surely would have been much greater. Many schools were damaged or destroyed. Office buildings and businesses were crushed and buried under rubble. The earthquake triggered five major landslides in Anchorage and dozens of minor slides. City officials estimated that losses in public and private sectors exceeded \$122 million (1964 dollars). The majority of the losses was associated or directly attributable to the landslides (L. Selkregg et al. 1984).

Aftermath and Reconstruction

President Lyndon Johnson immediately directed the National Academy of Sciences to form a technical group to conduct an indepth study of the earthquake's effects on the surrounding environment and communities. It ultimately recommended guidelines for national hazard research and set policy directions for future hazard mitigation.

Within a day after the event this group organized to investigate the event and its impacts. It included a federal scientific and engineering task force appointed by a special presidential commission, a special panel of architects appointed by the presidential committee, the U.S. Army Corps of Engineers, and an engineering and evaluation group established by the Alaska State Housing Authority (ASHA).

One of the group's major objectives was to identify high-risk lands. They based their designation of land stability on slope and land performance during the earthquake. Five major slide areas were identified in Anchorage: Turnagain, Fourth Avenue, L Street, the Native Hospital, and Government Hill (see Figure 1a). The Fourth Avenue slide involved 14 city blocks on the north side of Fourth Avenue, an oval-shaped area of approximately 36 acres. Large fractures and related ground displacement extended one and one-half blocks to the north of Fourth Avenue (see Figure 2). The L Street slide involved nearly 30 blocks adjacent to Knik Arm along the northwest part of the city. It reaches back from the bluff approximately one and one-half blocks (see Figure 1b).

The Turnagain slide was the most destructive. It extended approximately 8,600 feet west to east along the bluff line (Figure 3). It involved 130 acres of land, and the ground area within the slide dropped an average of 35 feet. The Native Hospital slide along Third Avenue was relatively small, 650 feet across and 350 feet long. The Government Hill slide was small and involved an area approximately 1,180 wide and 600 feet long on both sides of Ship Creek.

The investigative task force prepared a map identifying different risk classifications (Figure 4). It advised either prohibition or tight control of high-

risk land use, limiting development to off-street parking, parks or other low-density purposes. The group expressed extreme concern over the need to recognize the hazards associated with unstable lands and to develop appropriate community planning, zoning, and new building codes.

Redevelopment plans prepared by local architects soon after the earthquake for the L Street and Fourth Avenue slide areas were rejected by the city council. The area identified by the task force remained designated as high risk, and the U.S. Department of Housing and Urban Development would not insure loans on the properties.

On L Street many structures had no apparent damage even though they had moved laterally up to 14 feet toward the inlet. The area's high-risk designation prevented federal assistance to property owners for needed repairs or complete reconstruction. Instead, property owners were given an opportunity to relocate with federal assistance. Yet federal disaster funds were used to restore services, utilities, and roads fundamental to land use of the slide area. Without services the existing structures would have been unusable. Less than a year after the earthquake the city council voted to rezone the area for higher-density residential development and to redesignate some multiple-family residential areas to allow for office uses (*Anchorage Daily News*, February 1977; L. Selkregg et al. 1970, 1984).

The local business community objected to the recommendations of the task force and technical groups. They believed that implementation would further disrupt the local economy, arguing that the city could not sustain such limitations. Despite a response that the recommendations would lead to a much-needed renovation of part of the Anchorage business district, the city chose to reject the technical group's advice (L. Selkregg et al. 1984).

In 1976 the City of Anchorage adopted a Comprehensive Development Plan. The draft plan addressed seismic issues. The final plan does not even include the word earthquake. A draft plan addressed the warnings of local consultants and the original federal task force. It included recommendations that the portion of the central business district that is susceptible to earthquake-induced land slides be given a high-risk classification, as recommended by the task force. Any development in these areas should conform with specifications governing the development of such areas. This recommendation was deleted entirely from the final plan (*Anchorage Daily News* 1977).

The final plan does make reference to potentially hazardous lands and defines them as areas where the unique geologic features or geographic conditions create hazards to life or property and should not be developed (Municipality of Anchorage 1976).

A 1977 *Anchorage Daily News* article quotes planners as saying "Little has been done with the recommendations of the federal task force, the consultants, and the planning department, because of simple political pressure. ... politicians, after all, often reflect the attitudes of their constituents. And people in Anchorage seem to have largely forgotten the Great Alaska Earthquake ... " (William Spangle and Associates 1978, p. B-33).

Professionals from several disciplines interpreted risk levels differently. Engineers viewed geologists as extremely conservative. In an earthquake series published in the *Anchorage Daily News* in February 1977, an engineer who helped design a large building on the L Street bluff said, "The geologist comes as close as anyone I can think of to creating wild rumors. They look at things entirely differently. They're a breed to themselves." The *Daily News* series quotes another engineer's view: "There's geologists, and then there's soils mechanics. The geologists, they're looking 10,000 feet down and 10 million years back. The soils mechanic is looking at the structure immediately under his feet; the first few hundred feet down. There's a world of difference in the way they look at things." (William Spangle & Associates 1978, p. B-27).

The community decision process did not reflect concern about seismic risk. A local zoning official with the Anchorage Planning Department stated,

"We look at earthquakes here more as a historical incident than as a recurring danger" (William Spangle and Associates 1978, p. B-27).

Most new construction was launched without evaluation of seismic issues. The city did not elect to spend money evaluating the economics of site stabilization. It required no special engineering or site stabilization in the slide areas. By 1978 the L Street area was zoned "residential office," which allows for one to 40 units per acre. No height restriction was imposed, consequently, in the L Street slide area several high-rise buildings were constructed directly on the graben.

On his return to Anchorage in 1984, Dwight Ink, federal director of the Alaska reconstruction effort, expressed great shock when he saw multistory buildings on the L Street bluff in spite of recommendations that no structure over two stories be constructed there. John Aho, a Geotechnical Advisory Commission member, noted, "It doesn't matter how well you engineered a building. If the soil gives way underneath it, there is going to be some problem (Selkregg, 1984, p. 244).

The downtown business community exerted great pressure to rebuild. The recommendation for an urban renewal project, which had originally included all the lands designated as high risk, was reduced to only that land directly damaged. Adjacent unstable lands were excluded. "Anchorage not only

permitted rebuilding in the major slide areas of L Street and Turnagain, but also went from low density, single family to commercial, permitting multi-storied structures in the L Street area" (L. Selkregg et al. 1984, p. 3).

L. Selkregg et al. continue:

A review of land use and administrative practices in Alaska as well as in other earthquake- and tsunami-susceptible areas in the country has revealed that almost 20 years later, the majority of the National Academy of Sciences recommendations directed to hazards mitigation have not been followed. In fact, it is the opinion of many scientists and planners that if a major earthquake were to occur today in Alaska, the state and its major communities would be at a level of readiness no better than that of March 27, 1964. Here, as a result of increased population and development that has occurred in coastal areas, especially in upper Cook Inlet in the last 10 years, some believe that another earthquake could have an even greater impact on commerce and people than the one in 1964.

Today, 30 years after the great earthquake, much of Anchorage's downtown multistory development is concentrated on the L Street-Fourth Avenue slide areas. The new construction includes five new hotel towers (ranging from 14 to 22 stories); many office buildings, some including shops and first-floor restaurants (ranging from 3 to 12 stories); and several apartment complexes (ranging from 2 to 12 stories).

Most buildings were constructed to meet the requirements of the Uniform Building Code (UBC). The code is fashioned after California's and other western regions' codes and is designed to recognize risk and include

features intended to reduce losses due to earthquakes. "The main problem with the UBC is that it is a minimum standard for a large and diverse nation. Individual or local circumstances may dictate more stringent needs. However, building officials tend to perceive the UBC as a maximum in all circumstances" (L. Selkregg et al. 1984, p. 240).

The most significant seismic safety improvement after 1964 was the Fourth Avenue buttress, which stabilized a four-block section of the Fourth Avenue slide area. Similar work did not occur in the other slide areas along L Street and Turnagain. In fact, it is possible to walk below the L Street bluff and watch water seeping through it to the inlet. Water is trapped between composite layers of clay and sand. This formation is the perfect medium for a slide should another earthquake occur (L. Selkregg et al. 1984).

Over the last 30 years the effects of tidal action on the toe of the Turnagain slope increased undercutting of the area, resulting in reduced stability. "If a seismic event similar to 1964 occurred, the probability of damage and amount of dollar loss would be more than \$400 million compared to \$86 million in 1964. Currently, the Turnagain slide area is being redeveloped for residential use (L. Selkregg et al. 1984; *Anchorage Daily News*, 26 March, 1989).

Thomas (1989, pp. 1-10) warns, "The Uniform Building Code does not consider the demands on buildings from relative ground displacement (ground failure). Hence, supplemental code requirements are necessary in areas where ground displacement is particularly a hazard."

He also submits that "although the bluff areas in Anchorage are generally in 'high-hazard zones,'" he believes that they are not "necessarily high-risk building sites." He suggests site-specific geotechnical investigation that considers land use and building occupancy. "In general, he states, "public use buildings with high occupancy require the greatest degree of geotechnical analysis." Thomas' conclusion, that high-hazard zones may not imply high-risk building sites, begins to create the necessary professional rationale that allows development in high-hazard zones.

Figure 1a. Anchorage Slide Area Location Map

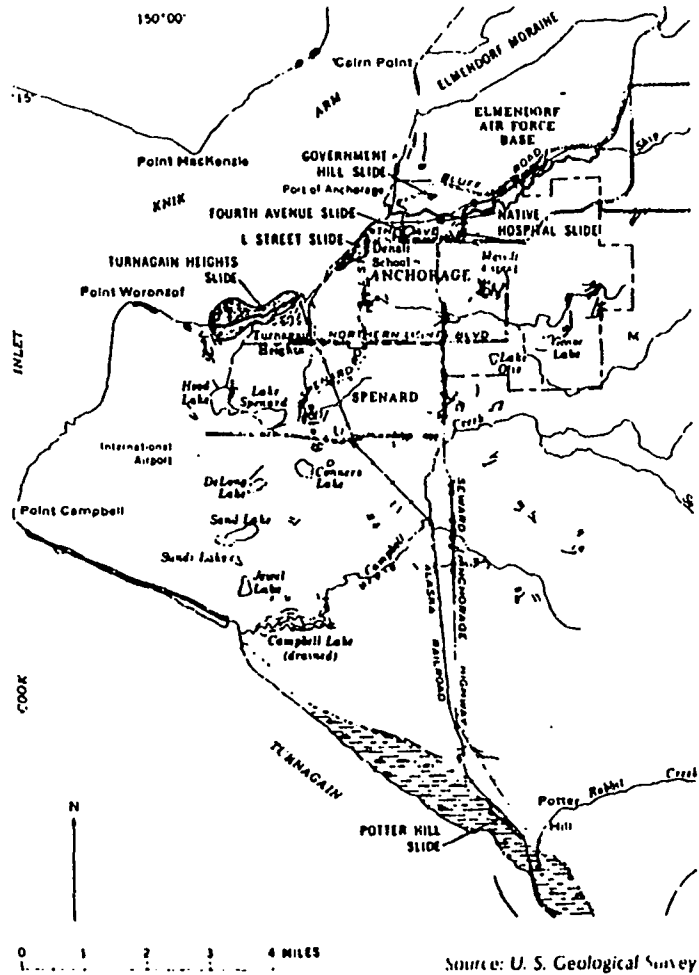


Figure 1b. L Street Graben Overview

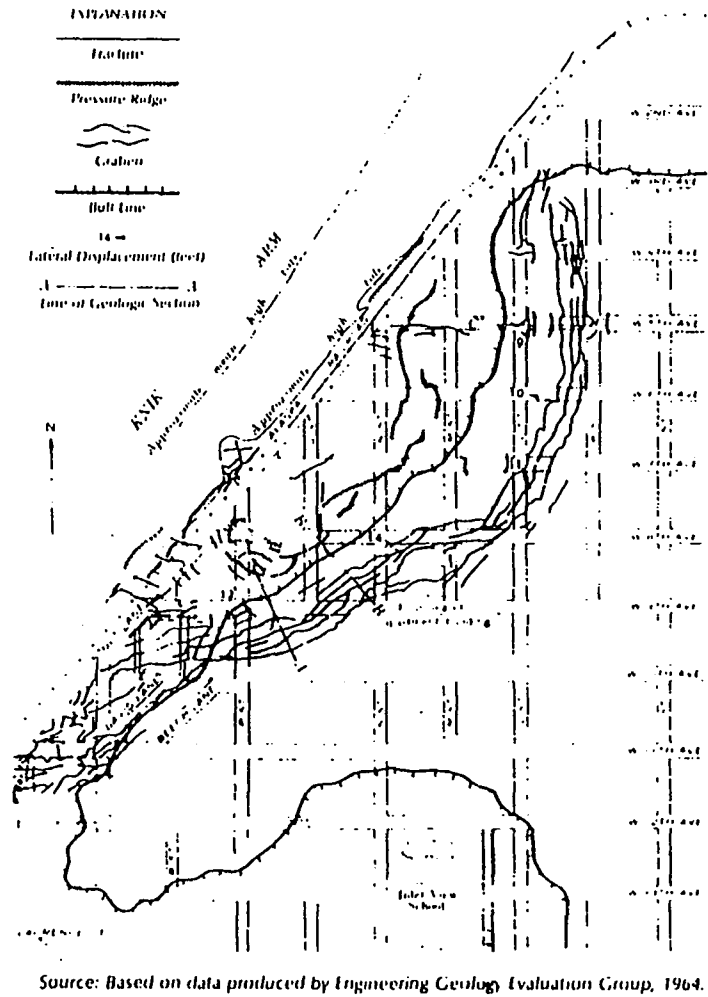
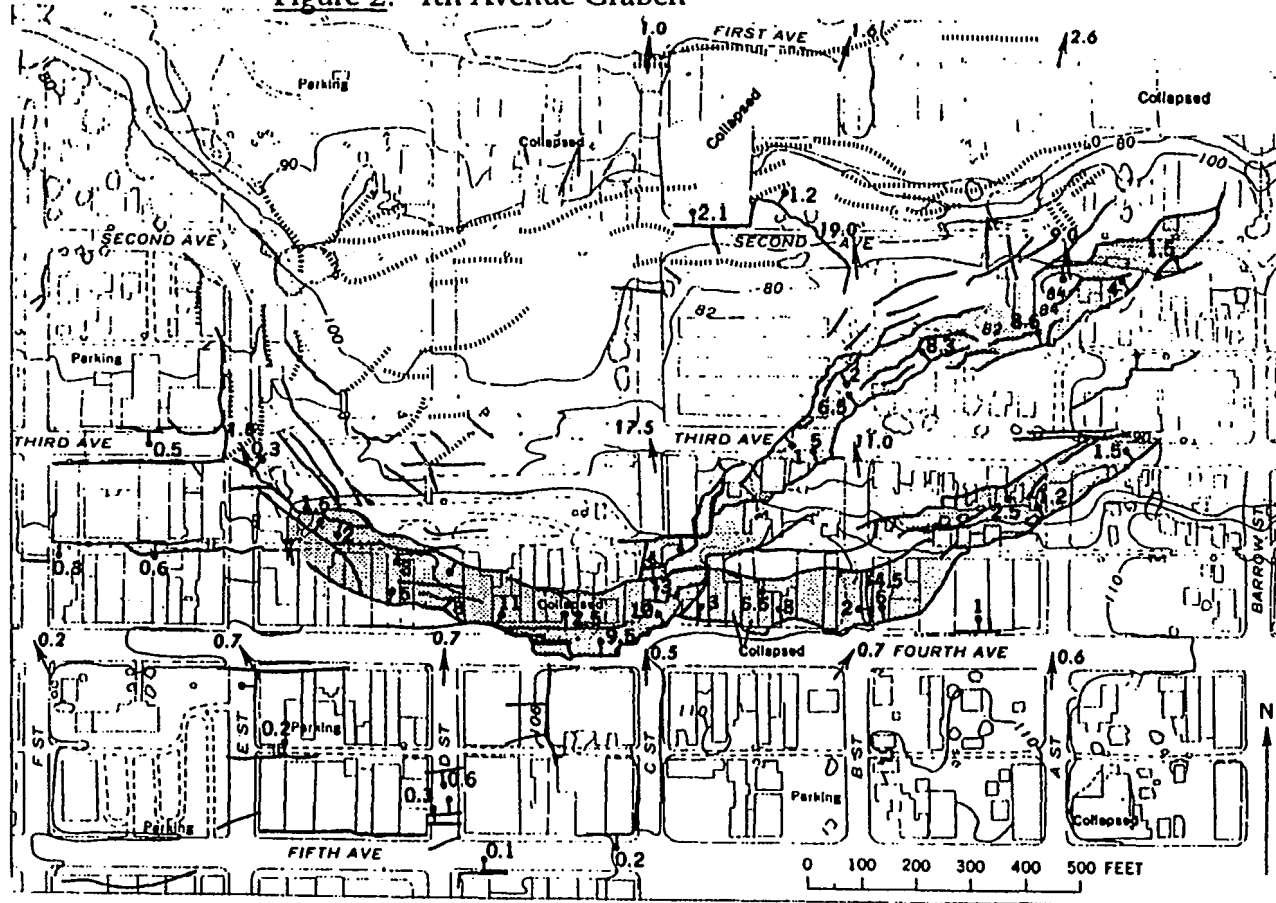
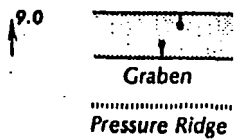


Figure 2. 4th Avenue Graben



Lateral displacement of bench mark, in feet. New position at point of arrow. No appreciable movement since earthquake.



1.5
Fracture, showing downthrown side and displacement in feet

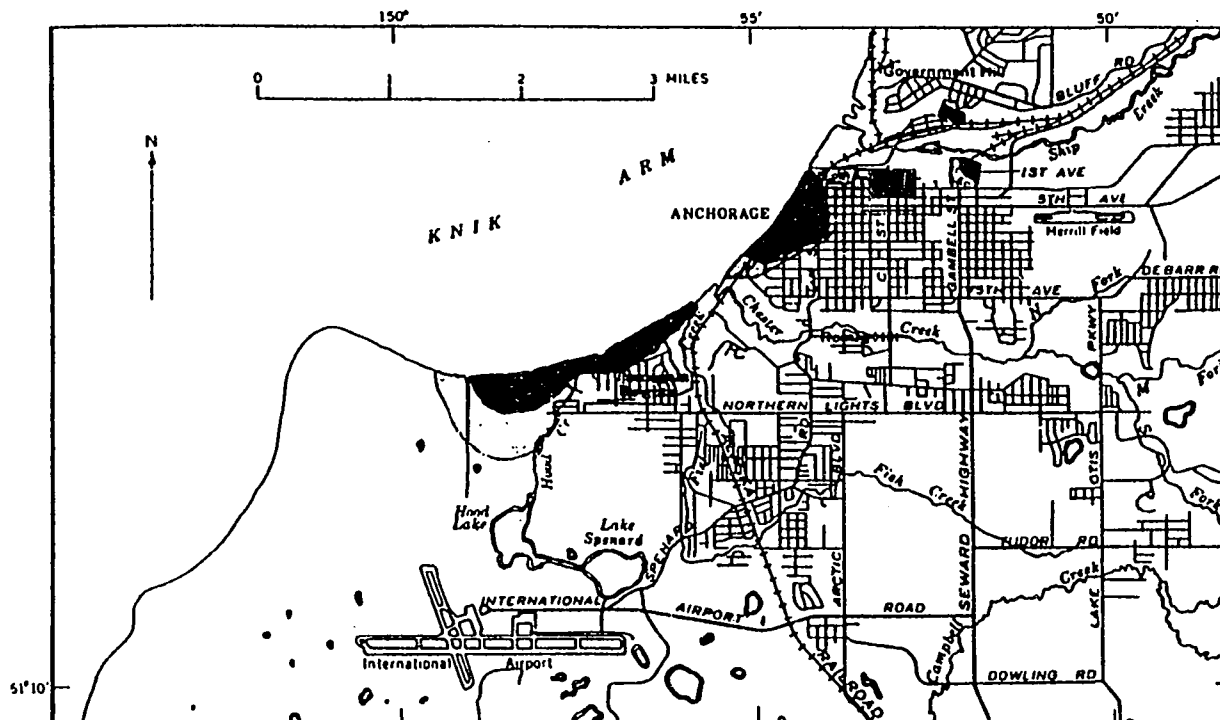
Base by U.S. Army Corps of Engineers

Compiled from aerial photographs and data taken from reports of Engineering Geology Evaluation Group (1964) and Shannon and Wilson, Inc. (1964).



Figure 3. Turnagain Slide 1964 Air Photo

Figure 4. Task Force Risk Classification Map




Nominal-risk Area 

little likelihood of landslide except for small slumps, largely in artificial fill. In all other respects risks are no greater than is normally expected in the construction industry where structures are built on a thick sequence of unconsolidated sediments. Current Uniform Building Code for Seismic Zone 3 applies both to new buildings and to plans for rehabilitation of earthquake-damaged structures. Special engineering consideration should be given to construction near the top, at the base, and on steep slopes, especially where the Bootlegger Cove Clay is present. No filling, cutting or construction should be permitted that will steepen or increase the load on or above these slopes.

Source: This map and press notice released September 8, 1964 represent the final recommendations in risk classification of Anchorage by the Scientific and Engineering Task Force.

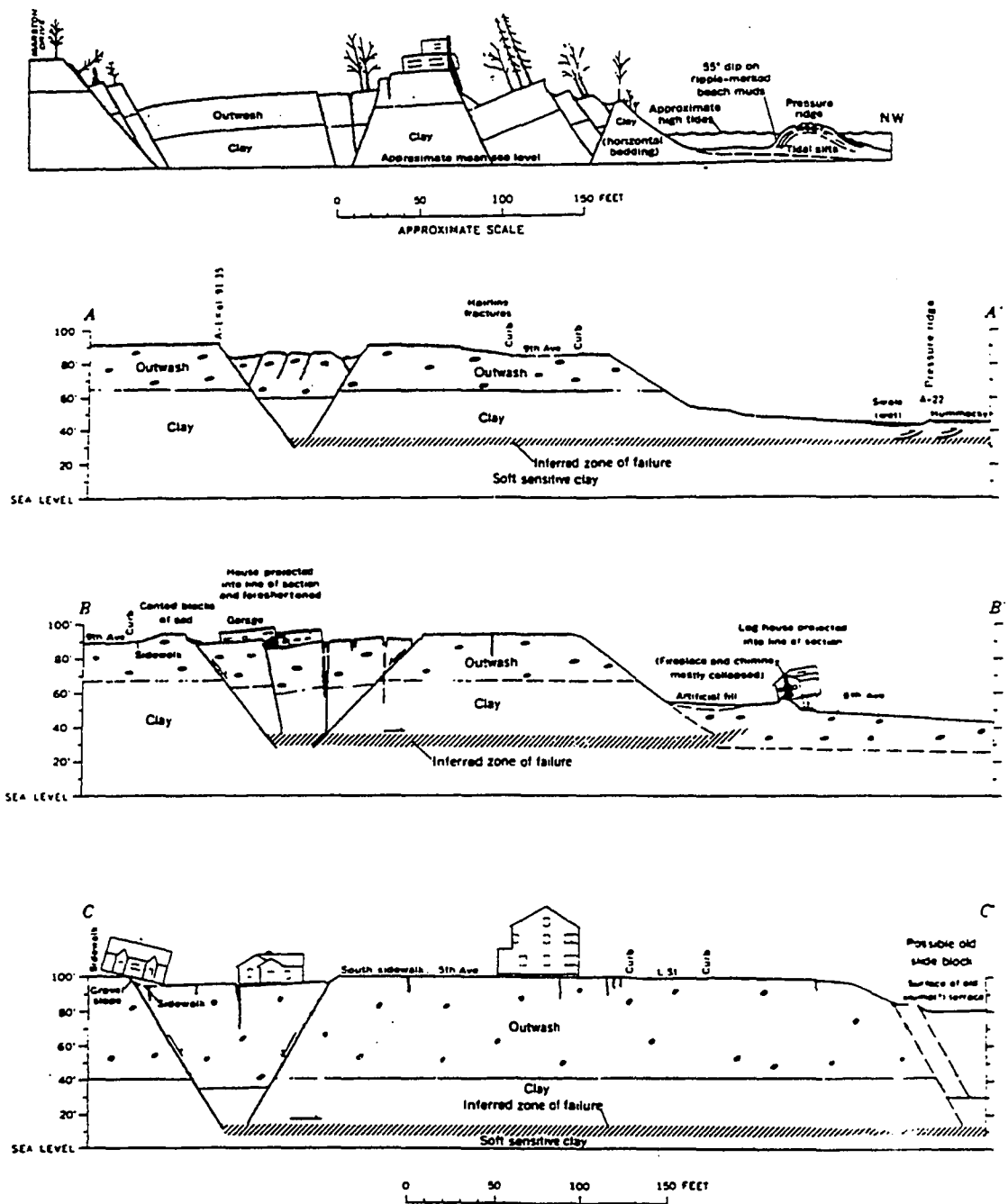
Provisional-nominal-risk area 

Reclassification to "nominal-risk" in these areas is contingent on stabilization of adjacent slide areas or stabilization within the areas themselves. If stabilization is not effected, land will be "high-risk" classification.

Unstable area 

Land considered unstable in the event of future earthquakes unless stabilization is attained. No new construction and only limited rehabilitation is recommended unless stabilization is attained. It is recommended that after stabilization, new buildings on Fourth Avenue, L - K Streets, and Government Hill slides be limited to light structures not over two stories high. No buildings are recommended on the Turnagain Heights slide between the bluff and tidewater, nor on the First Avenue slides, even after stabilization. If stabilization is not effected, land will be "high-risk" classification.

Figure 5. Turnagain and L Street Slide Cross Section



Source: Hanse, 1965.

CHAPTER 2

LITERATURE REVIEW

The scope of literature reviewed incorporated a broad expanse of ideas into the evaluation of this study's findings. Because it was exploratory, the review included studies of public policy decision making and some social and environmental psychology as well as risk management and earthquake planning literature. Each of these fields provided valuable insights. With some overlap, each author offered unique insights into the topic.

Much of the policy- and decision-making literature focuses on understanding decisions through examination of case studies done in structural and organizational situations. The field directs its information toward effective decision making in large private and public enterprises, e.g., government agencies, large corporations, etc. The social-psychological and cognitive theories seek to understand the sequence of ongoing human behavior. Influences and effects are central components in this literature. It focuses on understanding the individual mental processes, such as labeling, interpreting, and attributing meaning to specific situational base behavior. Risk-management literature is practically based in the examination of the

ongoing problems associated with identifying and controlling public hazards. It provides insights into local, state, and federal policies and decisions relating to specific kinds of hazards.

The following review of literature builds the groundwork for exploration. It begins to provide the intellectual construct, vocabulary, and measurements necessary to this investigation.

POLICY AND DECISION MAKING

The history of policy- and decision-making literature stretches as far back as pre-Babylonian times. Much of today's literature on these topics grew from previous works associated with public administration and accounting, heavy with ethical overtones about making moral and right decisions. Yet the fields of ethics and the decision processes do not mesh easily.

At the end of the seventeenth century William Scott wrote an "Essay of Drudgery or the Complete Citizen, Trading Justly, Pleasantly, and Profitably." One hundred years later most essays in public administration tried to explain the world in rational, scientific terms basically devoid of ethical discussions. Accounting was an important discipline by then, meeting immediate commercial demands associated with large concentrations of people brought

together by the industrial revolution (Brewer and deLeon 1983). Miller and Starr (1967, p. 8) believe,

The importance of accounting to administrative functions was so great that it tended to crystallize in definite forms, that which could be put to work on specific problems. However, accounting problems were inextricably connected with problems of observation and measurement, systems analysis, model construction and decision theory.

This connection to accounting is mentioned because it indicates the basic rational approach to most decision-making models. Fischer (1982, p. 2) tells us that there appears to be a fact-value separation based on

. . . positivism's adherence to the methodological theory known as value noncognitivism. . . and while noncognitivism may confront important problems that arise in ethical inquiry, misinterpretation or even extension of the fact-value separatism has impeded the development of useful methods of improving rational judgment in practical deliberation.

According to this theory, value judgments are essentially emotional responses to life's conditions. To qualify as objective knowledge, statements must be verifiable by formal scientific methods (Fischer 1982).

Most decision-making models have been designed to explain the decision process in terms of positivism (or logical imperialism). Consequently, an effort is made to have value judgments submitted to some formal method of scientific verification. Yet a value-inclusive model makes it difficult to establish validity. We need a model that allows for repeating observation from setting

to setting. "Preoccupation with establishing the theoretical and scientific validity of value noncognitivism has led positivists to either reject or ignore the study of normative discourse in everyday life" (Fischer 1982, p. 3; Miller and Starr 1967).

Decision-making models are limited by their very nature. They are abstractions that only illuminate certain aspects of reality. They fall short of providing sophisticated insight into the complex "why" of many decisions. In light of the importance that the rational decision maker has played in positivism and nineteenth and twentieth century thought, it seems appropriate to begin this review of the models by looking at rational models.

Rational Decision-making Model

This model assumes that we have rational decision makers functioning in a rational world where they have access to all information. Once a problem is presented, the decision makers clarify goals, values, and objectives and then rank them in order of priority. They list all possible alternatives that might help achieve desired goals. Next, they completely investigate all the consequences associated with each of the alternatives as related to the goals. Finally, after completing all these steps, they select the one alternative or policy with the consequences which most closely match the identified highest goal (Lindblom 1959; Janis and Mann 1977).

Rational decision makers optimize; that is, they act to maximize their own utility. They choose decision-making strategies that result in the highest pay-off in terms of their goals. Their task is to select the alternative which leads to a preferred set of consequences based on the values and goals chosen to be maximized. "Such a strategy requires estimating the comparative value of every viable alternative in terms of expected benefits and cost" (Janis and Mann 1977, p. 22).

Suboptimizing

Under pressure to suboptimize, decision makers can "end up with an unsatisfactory suboptimizing solution" (Janis and Mann 1977, p. 22). Some situations have more than one equally important goal or objective. Decisions may be optimal in relation to one objective but suboptimal when evaluated from another objective (Miller and Starr 1967). For example, closing a branch fire station may save the community money, but it also increases response time, which may reduce community safety. Many problems are multidimensional, and satisfying one objective may mean losing others (Janis and Mann 1977).

The larger the decision-making community the more difficult it is to optimize and the more likely it is to suboptimize. As different personnel perform different functions in the decision process, different objectives surface.

These objectives may be totally incompatible with one another. Yet even with these limitations, Janis and Mann (1977, p. 22) state that "suboptimal policy is not necessarily unsatisfactory even if it fails to attain all the policy makers' objectives, it may be a marked improvement" over the existing situation.

The limitations of the rational-optimizing model are obvious. The world we live in does not appear to be rational, usually because we do not have the time or knowledge to explore all possible alternatives and consequences. Herbert Simon (1976) believes that people simply do not have the ability to accomplish the comprehensive process of identifying and evaluating alternatives. In an effort to examine all alternatives the decision maker may become overwhelmed, which can be as debilitating as not having enough information.

Miller and Starr (1967) point out that human beings have a variety of functional motivations grounded in a diverse set of values linked to complex individual social structures. These values are influenced by our habits, traditions, faiths, and individual perceptions. Consequently, individuals make decisions which do not necessarily fit in terms of maximizing in the classical cost/benefit economic sense. "The utility an individual gains from a commodity or a service can be measured to some degree by observing the marketing

phenomena. . . . But there is no convenient measuring unit for the utility of an intangible such as dignity" (Miller and Star: 1967, p. 25).

Satisficing

In an effort to overcome limitations associated with the rational model, Simon (1979) offers the administrative satisficing model. This model is based on the perception of a human being as an organizational or administrative decision maker functioning within the concept of "bounded rationality" or "limited rationality." Decisions are made without a full examination of all possible behavioral alternatives. Administrators can and do make decisions based on relatively simple rules of thumb that allow them to function within the constraints of their resources (Simon 1976).

The decision makers seek a reasonable solution in light of minimal requirements and resources. They are satisfied with less information and analysis and seek a course that is "good enough." Although they still may look at many alternatives, they do not systematically work out a comparative balance sheet of pros and cons (Janis and Mann 1977).

Limitations associated with this approach are presented by Janis and Mann (1977) as well as by Johnson (1974). They found that executives may feel so uncertain about what might be their best choice that they select an obvious second best in order to "play it safe." Administrators may gravitate

toward a more conventional or familiar choice that is second best but will not cause an immediate disturbance or disapproval. These decision makers are concerned that their action be seen as "acceptable by superiors and peers who will review the decision and by subordinates who will implement it" (Janis and Mann 1977, p. 26). As the uncertainty about long-term outcome increases, so does the tendency to make policy decisions based on short-term acceptability within the organization (Janis and Mann 1977; Cyert and March 1963).

Incrementalism

Charles Lindblom (1959) offers incrementalism as another theory of decision making. He describes this process as a method of successive but limited comparisons. Decision makers do not identify goals and then seek and analyze alternatives for meeting those goals. Rather, they adjust their goals to meet or approximate the available resources and possible means. These decisions are not based on a long-term plan but instead are "geared to alleviating concrete shortcomings in present policy--putting out fires--rather than selecting the superior course of action" (Janis and Mann 1977, p. 33).

Incrementalism does not attempt to create planning policy or build a policy direction. Instead, it is involved in the endless struggles to deal with each new problem as it arises. It relies upon satisficing as a criterion for decision making. Incremental changes are often made in order to keep the

"politically powerful groups in the hierarchy sufficiently satisfied so that they will stop complaining and will not obstruct the new trend" (Janis and Mann 1977, p. 34; Halperin 1974). These decision makers maximize security and assume that all reliable knowledge is based on the past. The only decision without risk is the decision to do the same (Dror 1969).

Lindblom (1959) sees incrementalism as short-term oriented rather than visionary. Values and goals change as new experiences lead to the revision of what is considered important and possible. It is a moving away from a specific ill rather than moving toward some proposed good. It can be seen as an important process through which interest groups join together and use influence and compromise to affect the decisions of government. Lowi (1979) challenges the benefits of such interest group power in decision making and questions the outcomes of the clientelism associated with the interest group's incremental decision-making process.

Mixed Scanning

Mixed scanning is an effort to synthesize the rigid approach of rational optimizing and the muddling through approach of incrementalism and satisficing. The key point Janis and Mann (1977) tell us about mixed scanning is that decision makers use different models for different problems. Decision makers often used basic optimizing strategies for fundamental policy questions.

After policies are set, the incremental process is used to deal with smaller, less important decisions. This mixed scanning is intended to offer a more realistic approach to decision making (Etzioni 1967).

This approach implies the use of multiple models and argues that to understand and analyze governmental behavior, we must draw on many models. As each model has developed, it has sought to replace another one. This model assumes that one may choose one, two, or many approaches to decision making. Each approach when used alone is incomplete. The whole process is revealed only when we utilize a combination of models. Mixed scanning recognizes that decision making requires the balancing of many competing values and goals. All the varied interests and concerns which exist around a decision play into that decision process (Etzioni 1967; Janis and Mann 1977).

Seeking a Vigilant Process

A variety of models exists to enlighten our understanding of decisions. Janis and Mann (1977, p. 40) tell us "whether the decision makers strive to optimize, settle for satisficing or try to follow a mixed strategy, the likelihood of miscalculation and postdecisional regret increases as a function of the degree to which they fail to engage in vigilant information processing." Vigilant information processing is defined in terms of seven criteria. Janis and Mann

(1977, p. 11) tell us that decision makers, to the best of their ability and within their information-processing capacities, should:

1. Canvass a wide range of alternative courses of action.
2. Survey the full range of objectives to be fulfilled and the values implicated by the choice.
3. Weigh whatever they know about the costs and risks of negative consequences as well as the positive consequences that would flow from each alternative.
4. Seek new information relevant to further evaluation of the alternatives.
5. Assimilate and include any new information or expert judgment to which they are exposed, even when it does not support the course of action they initially preferred.
6. Reexamine the positive and negative consequences of all known alternatives, including those originally regarded as unacceptable, before making a final choice.
7. Provide for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize.

The authors recognize that outlining the ideal procedural criteria for decision makers is just the beginning of the challenge to understanding the process of good decisions (ones without significant long-term postdecisional regrets). They go on to present their stress model, which examines the conditions under which people are most likely to adopt a nonvigilant satisficing strategy as opposed to more vigilant ones.

Stress Model

Janis and Mann (1977, p. 46) offer an analysis of decisional conflicts which result in symptoms such as "hesitation, vacillation, feelings of uncertainty and signs of acute emotional stress . . ." They submit that this stress can lead to a variety of behaviors--some positive and some negative in terms of decision making. They see the functional relationship between psychological stress and decisional conflict represented in five assumptions.

1. The degree of stress generated by any decisional conflict is a direct function of the goal strivings that the decision maker expects to remain unsatisfied: the more goals expected to be unfulfilled and the more important the needs to which those goals correspond, the greater the stress.
2. When people encounter new threats or opportunities that motivate them to consider a new course of action, the degree of decisional stress is

a function of the degree to which they are committed to adhere to their present course of action.

3. When decisional conflict is severe because each alternative poses a threat of serious risks, loss of hope about finding a better solution than the least objectionable one will lead to defensive avoidance of threat cues.
4. In a severe decisional conflict, when threat cues are salient and the decision makers anticipate having insufficient time to find an adequate means of escaping serious losses, levels of stress remain extremely high and the likelihood increases that the dominant pattern of response will be hypervigilance.
5. A moderate degree of stress in response to a challenge threat induces a vigilant effort to scrutinize the alternative courses of action carefully and to work out a good solution, provided the decision maker expects to find a satisfactory way to resolve the decisional dilemma.

(Janis and Mann 1977, p. 50-51)

The model helps us understand individual response to varied decision-making stress. It indicates that good solutions can be motivated by a moderate degree of emotional stress. Yet low stress can lead to lack of concern

and insufficient review, and on the other hand high stress can lead to defensive avoidance and poor cognitive processing.

Coping Patterns

Each of the stress-related assumptions also have coping patterns. Janis and Mann (1977) use "A Model of Emergency Decision Making" as a way to reveal just how these coping patterns can fall into place as the decision process unfolds. Briefly, the model involves the following process.

1. When a warning is presented we ask, "Are the risks serious if I don't take protective action? Is the warning credible?" We decide the probability of danger. If the warning fails to arouse sufficient stress, business will continue as usual.
2. If the answer to our first question is yes, we begin to seek escape routes, and when we think about protective action, we ask, "Are the risks serious if I take this particular protective action?" If the answer to this question is no, we seek the protective action and our stress begins to disappear.

3. If we answer yes or maybe to question two, our stress may increase. We become preoccupied with finding a better approach. Hope becomes essential. We must believe that we can find an escape route. Here we might ask, "Is it realistic to hope to find a better means of escape?" Two patterns of behavior may result if the answer is no:
 - a. Defensive avoidance. We may become selective about what we perceive as dangerous and may focus our attention elsewhere. We lack interest in the situation and become "selectively inattentive." Janis and Mann (1977, p. 58) tell us that this "evasive form of defensive avoidance" will most likely occur when there is no escape, as in the case of infantrymen pinned down on the front lines.
 - b. Buck passing. Buck passing is closely related to the evasive forms of defensive avoidance. Persons rationalize that others know more or better than they do. It may occur when there is an opportunity to transfer responsibility for a decision up or down the hierarchy. Or when we can transfer the responsibility for a decision to another person, expert, or process. When we find ourselves in situations where we are forced to commit ourselves to a course of action, we may develop a defensive avoidance rationalization supporting that action. Bolstering can be used to rationalize a decision and lead to ignoring information

about the failures of our "least objectionable escape route" (Janis and Mann 1977, p. 59). Bolstering is examined in the Psychology section of this study.

4. If we answer yes or maybe to question three, we find that vigilance tendencies will dominate defensive avoidance tendencies. The next question becomes "Is there sufficient time to make a careful search and evaluation of information and advice?" If the answer is no, hypervigilance accompanied by irrational and poor judgment may occur.
5. If our answer is yes or maybe, we will proceed in a vigilant manner so long as there is hope and time (Janis and Mann 1977, pp. 52-62).

The conflict model points out that in the face of unresolved high conflict a decision maker's information processing can be broken down into two categories: hypervigilance and defensive avoidance. Hypervigilance is usually associated with immediate disaster, which results in panic-impaired cognitive abilities, frantic search, and ultimately decisions made in a highly emotional state. This does not seem to be the setting associated with this research (Janis and Mann 1977).

The pattern of behavior associated with defensive avoidance may be more applicable. It involves errors in evaluating and assimilating new information. Defensive avoidance patterns can result in avoiding and distorting

information in order to cling to unreal and more comfortable perspectives of reality. Defensive avoidance decision making results in meeting a problem with selective attention and interpretation based on an intellectual-emotional construct which protects and maintains a selected reality even if that reality is not based on the true situation (Janis and Mann 1977, pp. 75-76).

Janis and Mann's conflict theory provides one framework for analysis in this research. By their own admission the theory is only a starting point for future research. To grasp a comprehensive perspective of the decision process we must recognize the contributions of attribution theory, cognitive dissonance theory, and expectancy theory as well as explore the impacts associated with phenomena such as "group think" and "bolstering." These theories are reviewed in the psychology section of this chapter.

Power Structure and Community Decision Making

Hunter's (1953) study on the Atlanta, Georgia power leaders reveals that a group of about forty businessmen determined policy for the city. That policy was carried out by several hundred persons including elected and appointed officials. He found the city's power structure to be dominated by a policy-making group. That group used the machinery of government for the

attainment of certain goals which coordinated with the interests of the policy-making group. The policies decided upon by an elite few were implemented by the elected, appointed, and bureaucratic community government.

Hunter (1953) discusses the difficulty that the relatively powerless understructure has challenging the power leaders. He points out that in some cases the methods of pressuring compliance may include isolation from all sources of support for the individual, including his job and therefore his income. He states that the principle of divide and rule is applicable.

Hunter based his findings on research which focused on Atlanta judges. He asked them to rank the relative power of the top leaders of the city. Next, he asked those who were identified by the judges to describe their activities, associations, and friendships. Hunter believes that the patterns of relationships resulted in a description of who really runs the community.

According to Hunter (1953, p. 248), power is a "necessity in modern community. ... some men will rule, others will be ruled." He believes that the critical question is "How can policy be determined so that it takes into account the interest of the largest number of people?" To Hunter it is essential to recognize the "sociometric choices which serve the power leaders" and to design decision systems which also serve the powerless understructure.

This view of community power systems was not supported by Dahl (1962). His work in New Haven found an extremely pluralistic system, characterized by stubborn and pervasive ambiguity. Both the leaders and those led were connected to and drew from many stratas of the community. Both found themselves in leadership roles as well as in the roles of being led. Dahl distinguished direct influence, which is possessed by few, from indirect influence, which is associated with many.

Banfield's work on the Chicago power structure found that the Democratic party machine leadership had the power to determine almost any matter. Rather than initiating proposals, the machine chose to ratify proposals presented to them by affected interests, when those interests agreed among themselves. When the interest disagreed the elected officials delayed decisions and at the same time the affected interests placed pressure on the official. Through this pressure they found cues by which to form an estimate of how the matter was publicly viewed. The elected officials feel that it is a duty to do what a broad cross section of the community wants; they therefore view the efforts to influence them as being simply an expression of community choice (Banfield 1961; Banfield and Wilson 1967).

These studies differ in methodology and findings, but they each share a common insight: Individuals who are not elected to public office play

important roles in determining community decisions. Those persons who impact decisions unofficially are motivated by a full range of reasons, ranging from self-interest to business interest to community interest. There is clear evidence that power structures exist in American cities which are not openly acknowledged as part of the public decision system. It appears that power structures generally allow for the continuation of community decisions which are directed by an informal power elite and which support the status quo.

PSYCHOLOGY

This review of psychological literature includes the presentation of behavioral theories in cognitive psychology. Cognitive psychology is concerned with ongoing behavior in natural settings. The theorists seek to understand how the cognitive process results in the patterns or intent of behavior. Cognitive theories focus on the mental processes. They involve problem solving, thinking, creative decision making, perception, and attribution. "The cognitive theorists do not look for motives so much as for some general understanding of the sequence of ongoing human behavior as it is mediated and controlled by ongoing cognitive activity, of which affect is a central component" (Lefrancois 1980, p. 305).

Several theories related to the cognitive process are important to this research. They are cognitive dissonance, attribution, bolstering, and expectancy. The examination of dissociation and memory also shed light on this study. This information helps us better understand how human behavior is manifested in the decision-making process.

Cognitive Dissonance

Cognitive dissonance theory maintains that when conflict occurs between cognitions (such as information, beliefs, customs, values, or attitudes) the response is to engage in behavior which will eliminate or reduce the cognitive conflict (Festinger and Carlsmith 1959). This theory tells us that we exaggerate the positive as a means of reducing the dissonance. We want to be comfortable with what we do. The theory indicates that we have a variety of techniques to insure a sense of positive outcome and reduce cognitive dissonance. These techniques include ignoring the negative and adjusting our customs or individual values, each of which serves to insure a sense of a positive outcome and reduce cognitive dissonance (Janis and Mann 1977; Festinger and Carlsmith 1959).

The concept of freedom of choice plays an important role in cognitive dissonance theory. A necessary precondition for dissonance reduction is the sense that the decision makers made the decision freely. This carries with it a

feeling or responsibility which is an important factor in the process of feeling cognitive dissonance (Festinger and Carlsmith 1959).

Attribution Theory

Cognitive dissonance theory is closely tied to attribution theory.

Attribution theory focuses on the study of perceived causation. Janis and Mann (1977, p. 267) state that it involves the "feeling of indifference and detachment that people display when they attribute a decision to strong external pressure rather than to their own free choice." The theory stems from work done by Heider (1958) which submitted that simple explanations of behavior can be distinguished in terms of personal (dispositional) or impersonal (situational) causes (Janis and Mann 1977).

Jones and Nesbitt (1971) emphasize the irrational aspect of attribution theory, noting that actors tend to attribute their behavior to the situation, while observers of the action attribute behavior to dispositional aspects of the actor. Once someone attributes his decision to pressure outside his control, he feels little responsibility for implementing it. Yet, if the pressures are subtle, then according to the attribution theorists, a person attributes his choice to himself and displays support and commitment for that decision (Janis and Mann 1977).

Bolstering

Attribution theory is connected to some aspects of bolstering. Janis and Mann (1977) refer to bolstering as a broad term which covers ways in which decision makers strive for and maintain the image of a successful outcome. They see bolstering as occurring not only after the decision but before the decision as well. (Festinger (1964) sees bolstering as only postdecisional.) Janis and Mann (1977) suggest using bolstering as a kind of filtering process. Oversimplification, distortion, evasion, and the omitting of major facts associated with less desirable alternatives are indications of bolstering and may occur well before the decision.

Six bolstering tactics identified by Janis and Mann are:

- 1) Exaggerating favorable consequences.
- 2) Minimizing unfavorable consequences.
- 3) Denying aversive feelings (developing positive arguments for negative outcomes).
- 4) Exaggerating the remoteness of the action commitment (making the outcome seem far away).
- 5) Minimizing social surveillance (convincing oneself that no one will find out).

- 6) Minimizing personal responsibility (passing the buck or attributing the action to some external uncontrollable pressure).

(Janis and Mann 1977, p. 91)

Expectancy Theory

Expectancy theory maintains that a person makes the choice to be connected with or to take some action based on the relative gains and losses he might anticipate to be associated with his decision. This theory submits that the course of action is a function of increases or decreases in the strength of two psychological forces. One force motivates us to seek gains, the other motivates us to avoid losses. This theory can be coupled with cognitive dissonance and attribution to begin to build a more complex perception of decision-making behavior.

Dissociation

Dissociation is a psychological concept allowing for the separation of an idea or thought process from the mainstream of consciousness. It can be understood as an extreme on a behavioral continuum which runs from full awareness through suppression (putting out of mind something we don't want to think about), through denial (a mechanism by which we refuse to recognize the reality of a traumatic situation until we have capacity to cope in another

way), through repression (a pathological psychological conflict described by Freud which allows for amnesia associated with unacceptable impulses), to dissociation (which is an amnesic barrier which prevents the interchange of different memories). The extreme end of the continuum is multiple personality disorder in which a person's customary identity is temporarily forgotten and a different identity is assumed. Braum (1988) explains that dissociation includes repression, as well as a component that he calls rubric of neuropsychophysiology (NPP) state-dependent learning (SDL) (Braum 1988; Matlin 1992; Spiegel 1993).

Braum believes that the NPP state is key to understanding the concept of memory linked to SDL. The fundamental premise of SDL is that something that is learned in one NPP state is most easily retrieved in the same state. Behaviors are expressed and shaped by environmental responses. If the reinforcement of behavior occurs in a sufficiently disparate, dissociated NPP state, the effect of that interaction will not be available under the usual NPP state. We then find that dissociation is manifested by a disruption in memory.

The theory of dissociation was originally presented by Franz Anton Mesmer (1734-1815). His first clinical explorations of dissociation were discredited by two royal commissions in 1884. Yet physicians in France and

England continued to pursue his theories because of their pragmatic usefulness for some patients (Spiegel 1993).

The current theory is built upon the work of Pierre Janet (1859-1947). His life research included a focus on post-traumatic stress disorders. He identified the link between dissociation and trauma. Janet also defined principles that form the foundation of modern work on dissociative psychopathology.

The dominance of Freudian theory in the 1920s resulted in a rejection of and decline of interest in dissociative behavior theory. Experimental studies done by Messerschmidt (1928) spread doubt on the very concept of dissociation and instead introduced the diagnosis of schizophrenia. This shift in focus resulted in a decline in dissociative behavior research and led to many misdiagnosed cases (Spiegel 1993).

In 1980 the American Psychiatric Association introduced a criterion-based diagnostic system for dissociative disorders. This resulted in an increase in recognition of dissociative patients and a resurgence of clinical attention to the theory. Recent laboratory investigations have contributed to a new recognition and acknowledgment of the role of dissociation in normal and pathologic mental processes (Spiegel 1993).

Dissociation is similar to cognitive dissonance and defensive avoidance. They each support the concept that we process and receive information

differently depending on how compatible it is with our personal framework of what is good or safe. Ross (1991) recognizes the significance of the dissociative spectrum in cultural or social dissociation.

Ross (1991) contends that multiple personality disorder is an extreme expression of a basic, normal organizational principle of the human psyche and of systems in general. He believes that individuals have many conscious parts in their minds "outside the awareness of the executive self." These part selves function with relative autonomy, are capable of rational cognition, and make decisions about reality in a detailed, precise fashion. Multiplicity can be observed in the human mind, large corporations, modern governments, and the biosphere as a whole" (Ross 1991, p. 55).

Ross further submits that cultural dissociation barriers have been created and reinforced to keep other part selves suppressed and out of touch with the executive self. A cultural dissociation barrier maintains the executive ego in a state of pathological disconnection from other part selves in the psyche. This barrier is a product of sociocultural forces in a society characterized by such psychology. A review of the literature indicates that the role of dissociation in risk management and hazard perception is being examined for the first time through this dissertation research.

Memory

If our society functions in a similar manner, as individuals we may find that when the stress, or NPP state, is disparate, difficult, or painful, we dissociate from the memories or information which are connected to that state. Squire (1987, p. 167) tells us that memory can be understood in terms of (1) declarative memory which is directly accessible to conscious recollection such as fact through learning; and (2) procedural memory which is associated with learned skills or cognitive operations such as speech. Declarative memory is impaired by amnesia or dissociation while procedural memory is not.

Squire (1987) also states that declarative memory may be a relatively recent evolutionary phenomenon. He points out the notion that learning evolved originally as adaptive solutions to special problems and that memories were originally encapsulated into the particular neural machinery that produced them". Adaptive solutions to specific problems expressed in narrow sets of circumstances tie directly to survival and evolution. Rozin (1976) calls all the specific" limited-access machinery in the brain the cognitive unconscious." He goes on to state "part of progress in evolution toward more intelligent organisms could then be seen as gaining access to or emancipating the cognitive unconscious" (Rozin 1976, in Squire 1987, p. 167).

If the notion of learning evolved as adaptive solutions to special problems, it seems possible that specific memory loss associated with learning in extremely negative circumstances may serve as an important component to survival. Not remembering a negative event or not recognizing information which is unacceptable to the social group may serve as an important purpose as does remembering solutions to a special problem. If one remembered the previous event at the watering hole which resulted in death or injury of like species then returning to the watering hole may be too difficult. Perhaps, in the challenges of evolution, the species simply had to continue regardless of yesterday's dangers or events.

One can ask why for centuries we see a population living happily and fearlessly on a floodplain only to be devastated regularly by flood. Perhaps the land is most fertile; therefore, the chances of surviving are higher on the floodplain. Hence, we need within us the component to ignore or dissociate from floods. Zaman's (1989) studies of "The Social and Political Context of Adjustment to Riverbank Erosion Hazard" and "Population Resettlement in Bangladesh" address these human patterns and recognize the complexity of the sociopsychological process involved in location decisions.

One prevalent theme in natural-hazard literature is the integration of perception and behavioral variables into the understanding of social and

structural features associated with decision making in our society. The concepts of dissociation and denial can serve as important tools in understanding the decision-making process.

Group Behavior

Group behavior research done in the last 25 years indicates individuals often behave differently when they are part of a larger group or community. Their sense of responsibility and their expression of what is important can change. Two concepts which address group behavior regarding decision making are social traps and groupthink (Hardin 1968; Janis 1972).

Social Traps. Platt (1973, p. 641) defines the term social trap as a "situation in society that contains traps formally like a fish trap, where men or organizations or whole societies get themselves started in some direction or some set of relationships that later move to be unpleasant or lethal and that they see no easy way to back out of or to avoid."

Hardin's (1968) article "The Tragedy of the Commons" tells the story of the English commons where anyone could freely graze their cows. As each person increased the number of cows he was grazing on the commons to increase his own profit, the grass became more and more scarce. Finally, the commons is entirely overgrazed and destroyed. The owners, rather than gaining individually, collectively end up losing.

The Kitty Genovese murder in New York City nearly 25 years ago demonstrated the potential of a social trap when each of us depends upon the other to do the right thing. Genovese was murdered while many of her neighbors watched and listened from their windows. Each person believed that another would take the responsibility and get involved enough to call the police (Platt 1973).

Platt (1973) points out that Schilling's work on the ecology of micromotives shows how in many situations individual actions or inactions are tied to immediate personal goals resulting in long-term effects not in society's or the individual's best interests. Platt discusses ways to overcome a "locked-in" reinforcement network which loops back to reaffirm the social trap. He submits a variety of ways to begin to think about breaking reinforcement patterns associated with social traps. Yet he also recognizes that the many traps are part of our general cultural landscape, reinforced by our media, habits, drama, books, and social structures.

Platt (1973, p. 650) recognizes that "nested traps"--tied to our culture--are harder to solve. He sees the solution of social traps linked to "all of our most intractable and large-scale urban, national and international problems today." He offers social traps as an important direction in "illuminating and solving . . . locked-in cultural problems" (Platt 1973).

Groupthink. Groupthink is an "example of a concurrence-seeking tendency that has been observed among highly cohesive groups" (Janis and Mann 1977, p. 129). Janis (1972) selects a series of case studies that focus on historic mishaps to reveal that a collective pattern of defensive avoidance can occur. The pattern results in group members developing rationalizations to support concurrent group values and illusions about the organization's strengths rather than focusing on the reality of the situation.

Janis uses several case studies: (1) Neville Chamberlain's inner circle's appeasement of Hitler, (2) Truman's advisers who supported escalation of the war in North Korea, (3) Kennedy's inner circle supporting the invasion of the Bay of Pigs, (4) Johnson's close advisers' recommendation to escalate the war in Vietnam. In each of these cases there was clear information indicating that the course of action or nonaction taken would have a negative outcome. Yet in each of these situations the dynamics of groupthink allowed the decision-making process to be undermined by pressures of uniformity. These pressures resulted in the stifling of information, the avoidance of raising controversial arguments, and the general acceptance of a poor and incomplete thought process.

The case studies illuminated the following eight major symptoms of groupthink.

1. An illusion of invulnerability, shared by most or all of the members, which creates excessive optimism and encourages taking extreme risks.
2. Collective efforts to rationalize in order to discount warnings which might lead the members to reconsider their assumptions before they recommit themselves to their past policy decisions.
3. An unquestioned belief in the group's inherent morality, inclining the members to ignore the ethical or moral consequences of their decisions.
4. Stereotyped views of rivals and enemies as too evil to warrant genuine attempts to negotiate or too weak or stupid to counter whatever risky attempts are made to defeat their purposes.
5. Direct pressure on any member who expresses strong arguments against any of the group's stereotypes, illusions, or commitments, making clear that such dissent is contrary to what is expected of all loyal members.
6. Self-censorship of deviations from the apparent group consensus, reflecting each member's inclination to minimize to himself the importance of his doubts and counterarguments.
7. A shared illusion of unanimity, partly resulting from this self-censorship and augmented by the false assumption that silence implies consent.

8. The emergence of self-appointed "mindguards"--members who protect the group from adverse information that might shatter their shared complacency about the effectiveness and morality of their decisions.

(Janis and Mann 1977, pp. 130-131)

These conditions result in a "concurrent-seeking tendency," which can lead to a group illusion of being invulnerable and inherently morally correct. They can create an illusion of unanimity. Dissenters are perceived as out of or against the group. The outcome is an incomplete survey of alternatives and objectives.

The situation leads to poor information search with a bias of examining what is already known and agreed upon. The group also tends to be unwilling to examine risk associated with the group's preferred choices. Finally, problems are ignored. The group fails to examine its alternatives or work out contingency plans. This results in a poor outcome, which was indicated but ignored throughout the entire decision-making process (Janis and Mann 1977, p. 132).

RISK MANAGEMENT

Much of the risk management literature has come out of flood damage risk mitigation. The literature includes an exploration of how individuals cope with and perceive disaster potential and how these individual perceptions

relate to the community mitigation process. It addresses the concept of acceptable risk. It reviews selected case studies done in Alaska and California associated with hazard mitigation decisions. It also presents models and an integrated framework that address hazard mitigation planning and research.

Hazard Perception

Insight into the decision process concerning earthquake disaster mitigation can be found in works grounded in the University of Chicago's human ecology and occupancy research. White (1964) includes in his natural-hazards research examination of individual and community decisions to adjust in relation to flood risk, examination of the actual perception of flood risk in U.S. farm lands, and the review of general hazard perceptions impact on land-use decisions. Burton (1962) and Kates (1962) look at perception of hazard and choice regarding floodplain management. Saasine's (1966) work on exploring perception of drought hazard on the Great Plains (Zaman 1989).

These works expand traditional behavior and decision-making models. They also include individual perception and response as well as attitudes, beliefs, motivation, values, and specific personality traits in decision making. Zaman (1989, p. 198) points out "while it is often difficult to satisfactorily define and measure behavioral variables such as attitudes and values, exclusive attention to individual response and strategies tend to ignore attention to

other possible cultural and social factors underlying adjustments to natural hazard." Whyte (1986) uses internationally comparative case studies to explore individual hazard perception and human ecology. Barton's (1962) analysis of collective stress in community disasters and Kates' (1978) research concerning individual perception measurements used to assess environmental hazards add insight to the emerging field literature.

Zaman's (1989, p. 89) work on flood erosion response argues that the "social-political and historical context" must be addressed when evaluating human response to natural hazard. Kates (1978, p. 49) reminds us that "aversive risk methods are deeply rooted in the past, in the ritual, and habitual and in the unconscious. They tap strong affective emotions in ways little understood." Kates (1978, p. 59) also points out other difficulties in assessing benefits and risk. Most information is imperfect and result in analysis bias toward "the immediate, the defined, the economic, and the developmental." He presents case studies which support the complex nature of risk assessment and reveal the blur of social evaluation methods in real world settings.

Models

Most decision models in the risk management literature offer variations of traditional approaches to policy and implementation. The problem appears not to be in developing or finding a good model but in how to get a

community to actually use the model and implement the decision and policy produced through the model.

Garbage Can Model. This model assumes that decisions result from a combination of problems, solutions, actors, and decisions. Order and timing are associated with the solution of specific problems. A problem must be perceived as a problem before it can be solved. People discount risks associated with low probability, high-consequence events. "Most people never experience a severe earthquake and view the probability of one occurring as very low. Therefore, even if the prospect of a killer earthquake exists, the event is likely to have low political salience" (Alesch and Petak in Charles and Kim 1988, p. 233).

Solutions in the Garbage Can Model emerge as independent of problems. Again, timing is key. Policy results from matching a solution that is considered realistic with a problem that is considered serious enough to deserve attention. The role of the actor is that of the matchmaker. He matches the problem to a solution. This also must be done at an appropriate time so that it falls on the decision-making agenda when decision-making opportunities exist (Kingdon 1984; Alesch and Petak in Charles and Kim 1988).

Landscape Perception Model. In 1981 Italian Professor Guiseppe Imbesi presented a paper at the U.S.-Italy Workshop on Earthquake

Mitigation, sponsored by the National Science Foundation. He presented a model which deals with perceptual change. He concludes that we must think of natural disasters as part of our conceptual landscape, not as events that happen to a system, but as part of the historical fabric of the system. He points out that when a planning process reduces the issue of earthquake to planning codes and building criteria or "technical rationale issues," it is possible to ignore or replace essential factors. Old codes in new light give way to new codes that address current problems. Using Messina and Reggio Calabria, Italy's earthquake of 1908 as an example, Imbesi observes, "As time passed the building criteria based on the reduction of cost (and here an important role is played by annuities secured by real estate) prevailed over the original one based on safety" (Imbesi 1981, p. 15).

Imbesi makes a subtle but important distinction between the idea of forecasting (referring to some distant uncertain event) and predicting (referring to an event we are expecting). He encourages integrating what we know into our basic perceptions of a place. "We must then constantly recall the close relationship existing between the various natural events and try to assess the impact they can have either as a whole or individually on the habitat both in normal conditions and, all the more, in exceptional cases such as natural disasters" (Imbesi 1981, p. 16).

He points out that we must refer to the regional history to incorporate seismic risk into the planning process. He requires a conceptual shift in how we understand the information. Natural disasters must be recognized as facts, not as factors. When we integrate the facts into our regional and community planning and building process, we will be prepared for the disaster when it arrives.

Case Studies

Much of the literature in this field focuses on case studies of individual and community behavior related to hazardous situations. Both California and Alaska have experienced great earthquakes (7.75 or more on the Richter Scale). The 1971 San Fernando earthquake and the 1964 Alaska earthquake spawned many research projects and studies. During the past 40 years substantial amounts of time and money have been spent in both places to protect their populations and property from the impact of future earthquakes. Nevertheless, should a great earthquake occur today in California the damage would be staggering. (The January 1994 earthquake in California was a short, medium-level tremor, yet it caused significant damage.) Of course, the potential losses in California are much greater than those of Anchorage due to the size of the population and the scope of development; but depending on the

time of day, epicenter location, and the severity of the quake, Alaska could also face devastating disaster.

California. California's seismic safety efforts have centered around how the state has and should respond to the series of earthquakes that has plagued the region throughout its history. As early as 1868 the Hayward earthquake clearly displayed the massive damage earthquakes can inflict on unreinforced masonry buildings. Often seismic safety has been left to the voluntary discretion of local communities. Only in the last 25 years has California mandated local governments to address seismic safety. In 1971 the California legislature mandated local jurisdictions to develop a seismic safety element as part of their general plan. It was not until 1986 that the California legislature passed a bill mandating local governments to identify existing unreinforced masonry buildings and adopt ordinances to reduce the hazard.

Wyner and Mann (1986) review the outcome of the 1971 mandate in 13 local jurisdictions. They find only a few had implemented any part of the mandate. The majority had done nothing. They attributed these findings to two factors--seismic elements are too general and local jurisdictions have limited resources to develop and implement mitigative measures.

The California Seismic Safety Commission (1984) conducted a study similar to Wyner and Mann's. They looked at three counties and five cities

according to an effectiveness scale. The commission found that the mandate had resulted in few changes in existing land-use patterns. The committee did note the value of the seismic safety requirement in terms of heightening seismic hazards awareness on the part of local officials. Seismic information at least was being routinely collected, in contrast to before the mandate when the issue of seismic safety was completely ignored.

Palm's study (1981) questions the effectiveness of efforts to heighten awareness. She reviews the impacts of the 1972 California Special Study Zone Act. This act requires property sellers and their real estate agents to inform prospective buyers of the location of the property in relation to the special zones surrounding traces of faults. Palm concludes that agents had trouble understanding what the zones were, and they chose to disclose the information late in the purchase-negotiation process. Interestingly, most buyers did not recall the information. Yet those who did recall it and who were considering property in a fault zone indicated that the information did not affect their decision.

Finally, Alesch and Petak (1988) present a description of Long Beach and Los Angeles efforts to implement new earthquake hazard mitigation policies. They describe, using the "Garbage Can" model, how these two cities developed and enacted local ordinances requiring old buildings (subject to

potential structural failure) to be strengthened or demolished. Their description provides historical perspective on the issue of hazard mitigation and clearly identifies the players, their group interests, and the importance of timing in the policy development process.

Alaska. Soils and geological studies done in the 1950s in Anchorage predate the potential for ground failure experience in the 1964 earthquake (Miller and Dobrovolny 1959). Works by Shannon and Wilson (1964), U.S. Geological Survey (1966), and Harding Lawson (1979) articulate the high-risk nature of the Anchorage slide areas. Anchorage's first comprehensive plan draws upon information that identified the Turnagain, L Street, and Fourth Avenue bluff areas as earthquake risk areas. Later plans exclude the information and the community basically ignored the issue and proceeded to develop with little regard for potential risk.

Much of the literature since the 1964 quake clearly focuses on the fact that the local geology of the Anchorage region results in the bluff/slide areas being high risk. Other literature examines how state and local governments responded to the 1964 earthquake. L. Selkregg et al. (1984) outline immediate relief and reconstruction activities city by city throughout the state of Alaska. They specifically address seismic risk mitigation and how and where mitigation was effective or ineffective. The report provides technical and

political insight into the history of seismic risk management in Alaska since the 1964 earthquake and proposes effective implementation tools for risk mitigation, including a comprehensive planning model.

The U.S. Geological Survey sponsored a workshop in 1985 called "Evaluation of Regional and Urban Earthquake Hazards and Risk in Alaska." The proceedings of this workshop, edited by Hays and Gori (1986), include sections on the current state of knowledge and practice regarding assessment of earthquake risks; anticipating monitoring, and evaluating potential earthquakes; specific actions that can reduce potential losses from earthquakes; and preparedness and legal liability. The technical nature of the material appears to be directed to professionals who are knowledgeable about seismic safety issues.

Ender and L. Selkregg in Charles and Kim (1988) outline how the Anchorage Turnagain slide area, devastated during the 1964 earthquake, has been maneuvered toward redevelopment. It also addresses the geologically poor condition for reconstruction on the slide areas. The study shows how specific interest groups, private interests, and public agencies interfaced in the development of policy which led to reconstruction on the slide area. The important role of taxes, public services, and clearly stated public policy becomes apparent as this story unfolds.

Thomas (1989, pp. 1-10) estimates dollar damages to buildings, and the number of deaths and injuries that may be expected, given a specific disaster. He finds that in the event of a 1964 size earthquake the estimated damage to Anchorage will be \$617 million, 186 injuries, and four deaths. If the probability of a lower magnitude earthquake is factored in "the risk increased by a factor of 5 to 10. ... and an annual probability of 2×10^{-6} that a person in Anchorage will be killed because of an earthquake." He goes on to say "This life risk is low relative to other risks (e.g., motor vehicle fatality)." His work outlines the professional explanation of development on the bluff/slide lands.

Defining Acceptable Risk

There are a variety of approaches to perceiving risk. They take into consideration geological and soil conditions, time of day, population, structural makeup of the community, social values, and the potential for an earthquake to occur.

According to the U.S. Geological Survey, acceptable risk is that level of risk at which no governmental response is considered necessary." They also draw a distinction between risk associated with involuntary vs. voluntary occupancy. According to U.S. Geological Survey, "Structures occupied involuntarily should be safer than those voluntarily occupied. The distinction is especially important in those cases where public policy or laws require

certain classes of people, such as prisoners or students, to occupy structures which have fairly high occupancy" (U.S. Geological Survey 1979, pp. 48-49).

Seismic risk can be assessed in terms of dollars, deaths, injuries, cultural loss, and disruption in general development of a community. Scholl and Kustu, in Gori (1984), review procedures and data to assess risk and product damages. Armstrong (1973) includes four major factors in risk analysis--geology, site, structure, and building use. He evaluates each factor relevant to the site and proposed development and ranks them in terms of low, medium, high, and very high. Establishing acceptable risk is value based. It depends on how the community and individual weigh the specific factors. Table 1 outlines the scale of risk for various building uses.

Kates (1978) identifies three complicating factors in risk estimation methodology.

1. Human experience is limited and cannot be completely transcended.
2. Synthesis results in the distortion of assumptions which underlie common methods.
3. Perception and psychological assessment constrain the cognitive process.

TABLE I
SCALES OF RISKS FOR VARIOUS BUILDING USES

Level of risk to public	Kinds of structures
<u>Failure of a single structure may affect substantial populations</u>	
Extremely High	Structures whose continued functioning is critical, or whose failure might be catastrophic; nuclear reactors, large dams, power inter-tie systems, plants manufacturing explosives.
High	Structures whose use is critically needed after a disaster: important utility centers, hospitals, fire, police and emergency communications facilities, and critical transportation elements, such as bridges & overpasses; also smaller dams.
<u>Failure of a single structure will affect primarily only the occupants</u>	
Possible high risk	Structures of high occupancy, or whose to occupants use after a disaster will be particularly convenient: schools, churches, theaters, large hotels and other high-rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternate or noncritical bridge and overpasses.
An "ordinary" level	The vast majority of structures: most of risk commercial and industrial buildings, small hotel and apartment buildings, and single-family residences.

[Adapted from Scale of Acceptable Risks of the Structural Engineers Association of California, in Armstrong 1973, p.162]

Source: USGS 1979, p. B54.

Kate's work explores the inconsistency between perception and reality, the relationship of media and perception, and the effect they have on statistical data, social attitudes, and ideology. He defines a paradox between social perceptions and statistical trend. He poses the following three perceptual errors to illustrate this paradox:

1. Hazard is greater than the risk.
2. Hazard is less than the risk.
3. Hazard is different from the risk.

Obviously, these errors can and do affect sound disaster mitigation decisions.

Risk management literature reviewed for this research acknowledges the importance of cultural and social values and other unconscious factors in disaster mitigation decisions.

The way individuals process risk-related information and determine acceptable risk is complex. Values, beliefs, individual cognitive limitation, difficulty in clarifying facts and questions, evaluating the meaning of fact, and general ambiguities in defining the problem all enter into the definition of acceptable risk. Fischhoff et al. (1981) state that the decision about acceptable risk requires choice from predetermined alternatives. The outcome appears to be largely determined by the alternatives selected.

No single formula can define acceptable risk. "At best, one can hope to find the most acceptable alternative in a specific problem, one that will represent the values of a specific constituency." Fischhoff et al. compare major forms of decision making to the effectiveness of each method in assessing and determining acceptable risk. Their work concludes that no decision approach is comprehensive. The decision process is always selective, inevitably ignoring some factors while concentrating on others. The decision approach reflects those who rule their values. "The search for an objective method is doomed to failure and may obscure the value-laden assumptions that will inevitably be made" (Fischhoff et al. 1981, p.xii).

Fischhoff et al. (1981) tell us that our beliefs about the facts form our values, which determine what facts we seek and how we interpret what is found. Acceptable risk is not acceptable in any absolute sense. We accept decision alternatives, not risk. Risk is only one feature of a selected option. The selected option can be traced back to problem definition, option choice, and who did the choosing. "No approach to acceptable risk decisions addresses more than a portion of complex hazard problems. An approach's greatest contribution may be structuring those issues with which it does deal. If we feel compelled to calculate a bottom-line recommendation, we should not forget the heavy qualifications that should surround it" (Fischhoff et al. 1981).

Freudenburg (1988) examines perceived risk, real risk, and social science challenge of risk assessment and points out that scientists err as often as citizens in assessing risk. Although citizens may be subject to incorporating misinformation into their assessments, they also reflect a deeper kind of prudence than commonly recognized. He sees scientific errors as more problematic in those areas involving human and social factors and those requiring guesswork or judgment in the face of limited or nonexistent data. Monetary and political pressure can play a role in the evaluative process resulting in problems and distortions of risk perception.

Freudenburg concludes that we all must integrate human behavior into our understanding of "technological" systems. He suggests that we devote the same level of resources to understanding the human components of technology as we do to the system hardware. "Although often overlooked, human and social factors play vital roles in technological systems; real-world risks, far from being free of such inconvenient 'people factors' are indeed often dominated by them" (Freudenburg 1988).

Building a Framework for Planning and Research

One challenge of risk management literature is to find a framework to examine the complex nature of hazard mitigation. When we seek to understand why individuals and society choose a specific decision regarding

potential hazard, we must recognize the complexity of the decision process.

Palm (1990, p. 78) states:

We will best understand the complex relationship of individuals, society and the environment if we attempt to understand the experiences of individuals who live within a web of circumstances; if we integrate micro-level and macro-level observations, theory and conceptualizations. The world is contingent and probabilistic, and interactions between people and environment in given places and times are neither random nor law-given, but instead are the result of a combination of historical circumstances that confine but do not determine behavior.

Palm describes a useful integrated framework for natural hazards research and planning. She points out that "by focusing on the complexity and the interplay of behaviors and structures at a multiplicity of levels, we may gain a better understanding of the meaning of decisions made at each level." She proposes a framework which breaks the problem down into micro, meso, and macro levels of analysis. Significant linkages between elements at different levels are important to understanding the problem. The significance of the framework in accounting for human response to natural hazards is not in the novelty of its elements, but rather in its focus on a combination of elements and their interactions. Such a broad-gauged analysis should contribute to deeper understandings of the meanings, salience, and impacts of hazards (Palm 1990, p. 92).

The Palm model is designed to be adapted to a variety of natural hazard-related planning and research. The macro level of analysis in this model examines structure in the "sociopsychological society" and the environment which relates to and influences the risk-management decision. It explores such questions as: "1) What is the nature of the political-economic setting in relationship to environmental analysis and behavior? 2) What is the nature of the culture that modifies the relationship between political economy and environment, and further shapes the societal setting?" (Palm 1990, p. 80).

Palm defines the meso level as gatekeepers, including planners, managers, consultants, and bureaucrats, and impersonal structures, such as programs and policies administered by individuals. She points out the importance of understanding the role of individuals in intermediary positions and how these individuals both constrain and enable behavior through administration of societal rules. She also recognizes the role played by the administration of societal rules and their effect on individuals.

The micro level considers the individual variability in translating knowledge into action, the individual level of knowledge about the hazard, the degree to which the individual feels threatened, the sense of control an individual has over the potential risk, and finally, how salient the hazard is to other concerns of the individual's daily life.

The linkages between these levels "provide a framework within which any particular study can be cast." Palm states that the goal of empirical research is to study the effects of these linkages so that their combined effect on societal-environmental relationships can be understood. "By untangling and explaining the complex interactions, we can identify the nature of causality, as well as appropriate places for intervention." (Palm 1990, p. 92)

SUMMARY OF LITERATURE AS IT RELATES TO THE HYPOTHESES

Policy- and decision-making literature provides the classic decision-making model of rational, suboptimizing, satisficing, incrementalism, and mix scanning. It examines the actual process individuals use in maximizing the outcome in decision making. The models allow for varied degrees of selective input in the decision process. Selective input can in itself serve as a mechanism to ignore, deny, or dissociate from specific risk-related information.

The decision approach taken by the participants in this research may determine the level of acknowledgment allowed regarding specific information which relates to individual, private, and public constructs. This literature also includes an examination of coping patterns of defensive avoidance and buck passing, which are used in stressful decisions. These serve as ways in which

individuals and society can block, repress, or transfer responsibility of true risk-related information.

The policy- and decision-making literature includes a discussion of community power structure. This literature tells us that an informal power elite often has great influence on community decisions. Recognizing power structures helps provide a framework for the personal and social agendas which are actualized through the mechanism identified in this literature.

The psychology literature supports the hypothesis through a review of behavioral approaches used in understanding individual responses in stressful situations. Those approaches include the theories of cognitive dissonance, attribution, bolstering, and expectancy theories. These theories are central to developing an understanding of individual decision process regarding information presentation, selection, and inclusion. The brief discussion of the nature of memory provides a provocative insight into the idea that dissociation and denial developed as survival tools.

The presentation of the theory of dissociation in this literature helps explain the process by which information can be ignored. The examination of group behavioral theories provides an explanation of the power of group behavior dynamics. It shows how those dynamics can result in overlooking significant information.

The risk management section reviews hazard perception and tells us that it is difficult to define the social and individual value and strategies which determine perception. Information is often imperfect and biased to the immediate situation. Models in risk management deal with perception, solutions, actors, and decision options. Case studies show that risk-related information is often forgotten and does not seem to impact decisions.

Risk assessment is never comprehensive and depends upon a selective process which is value based. Finally, the macro, meso, micro approach to research analysis provides an integrating framework which allows for the examination of the complex nature of hazard mitigation and is central to the research design of this dissertation.

CHAPTER 3

RESEARCH DESIGN

The research design consists of an explanation of the framework of analysis used to organize and evaluate the research information; an explanation of the qualitative and exploratory approach used in the interviews of decision participants and the analysis of findings; and an outline of the process and order of the research.

This chapter presents the design for the examination and presentation of the large volume of information associated with the courthouse addition. It draws upon Palm's (1990) integrated framework as a means of examination. The research divides the information into decision components: Environment; Land Ownership, Power, and Reconstruction Momentum; Informational Backdrop; and Decision Participants. Each component is examined at a macro, meso, and micro level. The design is intended to encourage exploratory and qualitative research.

RESEARCH FRAMEWORK

The framework for this research is intended to illuminate the linkages and relationships which are central to understanding decision making. Framework should be seen as a tool through which complex sets of interrelated information are presented. Major components of analysis associated with the decision process have been identified to help organize the information into a structure that can be studied. Each component has potential influence in the decision. For examination and organizational purposes, the components are divided into macro, meso, and micro levels of analysis (Palm 1990).

The first decision component is Environmental Setting. It examines earthquake risks at the state, local, and site-specific levels. The second decision component is Land Ownership, Power and the Momentum to Reconstruct, which covers the overall rebuilding momentum in downtown high-risk land after the earthquake and the legal community's investment around the courthouse as well as that of downtown merchants and adjacent property owners.

The third component is the Information Backdrop. This section summarizes 12 years of media coverage of earthquake risk at the macro level. Conferences, seminars, and scientific reports dealing with earthquake-related

information for Anchorage are reviewed at the meso level. The micro level includes reports used in the specific evaluation of the courthouse addition decision. The Decision Participants component looks specifically at those publicly identified in the courthouse site-selection decision process. At the macro level are the Municipal Assembly, Planning and Zoning Commission, Geotechnical Commission, and the State Court Administrators. The meso level includes private and public planners, engineers, consultants, and bureaucrats. The micro level examines the users and occupants of the courthouse addition.

The scope of this study is broad. The perceptions and decisions of each of the above components, or any combination of them, could in themselves be a meaningful study. To define what occurred in this decision process requires a wide scope as well as a balance between quantitative and qualitative research. The interviews and research reviewed were selected to provide insight into each level of investigation.

METHODOLOGY

This study uses both exploratory and qualitative analytical approaches. The information review process draws upon Palm's (1990) macro, meso, and micro framework. It reflects efforts to choose information that provides the

most important insights about the decision process and acknowledges that the selection process is inherently subjective. The study is designed to use that subjectivity as a research tool which allows for the presentation of information significant to the understanding of a complex process.

The examination of qualitative methodologies versus quantitative methodologies raises several points about intellectual paradigms. The implication is that each approach carries with it distinctly different methods, assumptions, and interpretations of reality. Cook and Reichart (1979, p. 17) state:

It appears that quantitative methods have been developed most directly for the task of verifying or confirming theories and that to a large extent qualitative methods were purposely developed for the task of discovering or generating theories. It is hardly surprising then that each method-type would come to be associated with separate paradigmatic stances and the methods would also be at their best when used for these specific purposes.

The nature of this research requires qualitative rather than quantitative methods. The information will be revealed from an examination of the record of events and decisions as well as from indepth interviews with individuals who influenced the site-selection decision. The interviews added to the integrity of the research by providing insight and explanations which are not apparent in the public record. Of the many qualitative methodological approaches considered, the field of anthropology offered the most appropriate interviewing

models, though works in sociology, political science, and history also provided insight into interview aspects of this study (Walker 1985; Fielding and Fielding 1986; Punch 1986; Ferman and Levin 1975; Kirk and Miller 1986). Two examples of the kind of interview approaches used in this work are found in Lane (1967) Political Ideology: Why the American Common Man Believes What He Does and Kanter (1977) Men and Women of the Corporation.

Lane identifies key elements of interviewing. Assurance of anonymity is essential. Next, he explains listening with a "third ear." He refers to Reik (1949), who indicated that the basis of the physician's capacity to cure is to see things as the patient sees them. We must understand the outlook of the man we study. We must see things as he sees them before we "can profitably employ the apparatus and objectivity of science" (Lane 1967, p. 9).

Lane uses a discursive interview approach. Responses reflect the original train of thought to give "scope to anecdote, argument, moral comment and rationalization" and "to follow the course of associative thinkings." Interviews were conversational and dialectical, which allowed for opportunistic probing. He used a tape recorder to provide a textual record.

Kanter recognizes issues associated with large-scale organizations. She refers to Crozier (1964, p. 112) in identifying two problems. First, complexity of the role structure in modern organizations causes "ambiguity and over-

lapping, making it impossible to match comparable cases and to use rigorous methods meaningfully. Second, the general emphasis on status and promotions gives a crucial importance to the human relations game, thus preventing the research from obtaining reliable data on central problems of power relationship." Kanter suggests a combination of methods to solve these problems. Each source of data and each informant is used to check against another. She used survey, interviews, observation, document review, informant information, and informal conversation. She checked back and forth between these sources to make empirically grounded observations.

Agar's (1986) series presents a useful intellectual framework for qualitative studies. The series includes four books, each offering specific approaches and concerns regarding qualitative methodologies. Agar analyzes the qualitative ethnographic approach often used in anthropology. He explains that it is neither subjective nor objective. He sees it as mediating two worlds through a third. He states that we cannot use the quantitative methodological vocabulary to define the qualitative process. He offers a set of new words such as breakdown (differences, the unexpected, or inconsistencies), resolution which is found through adjusting "schemas" (or constructs) until the breakdown is resolved. Resolution ends in coherence. By framing the

problem in different terms he says we actually approach the problem differently and can provide a description more true to the process.

PROCESS AND ORDER

The process and order of this research follows the steps below:

1. Gather and review related scientific information, public records, decisions, and events. Break the information into macro, meso, and micro levels of analysis.
2. Develop an inner circle to serve as informants and against whom information can be checked. (They included a geologist, a former borough assembly member, a former planning commission member, a businessperson, and a representative from the risk-management community.)
3. Select key figures in the decision process.
4. Identify gaps in information. Identify persons who may provide information about gaps.
5. Divide key figures into the groups of power figures, decision participants, and occupants.

6. Examine the issues, the decision rationale, and process. Develop open-ended questions designed to fill in gaps in the record, and encourage exploration of the hypothesis.
7. Interview key individuals. Network from interview to interview. Tape-record the open-ended interviews.
8. Identify constructs or agendas associated with each level of analysis. Determine important linkages and perceptions.
9. Review the information generated in the interviews in light of the literature and the hypothesis.

CHAPTER 4

REVIEW OF THE RECORD

This chapter presents the core of the research data based on a review of more than 12,000 pages of private and public reports and records associated with pre-earthquake predictions, postearthquake reconstruction, and the courthouse decision process. The information is divided into four major areas: Environmental Setting; Land Ownership, Power, and the Momentum to Reconstruct; Informational Backdrop; and Decision Participants. Each area is broken into three levels of analysis: macro, meso, and micro.

The intent of this information is to present the broad physical, social-political, and historical context in which the decision occurred. Some facts in this review process do not fall neatly into one of the four major areas or into a macro/meso/micro framework. That information has been placed in the category which provides the most clarity in sorting and presenting the facts.

ENVIRONMENTAL SETTING

The underlying assumption of this research is that the courthouse is located in a known seismically active region. To insure the integrity of this

research we must examine the seismic setting of Anchorage, Alaska, and the specific site of the courthouse addition.

Macro: State and Regional

Alaska's land mass is only 0.3 percent of the Earth's surface, yet approximately 11 percent of all earthquakes that occur in the world take place in Alaska. Even so, the statistics seriously understate the level of earthquake activity in Alaska. It is only when we examine the energy released by Alaska earthquakes that we get the true picture. Earthquakes in Alaska are caused by the continual shifting of major geological plates in the region. "Over the past five million years, approximately 290 million km of Pacific plate has been thrust to the northwest underneath southern Alaska in the vicinity of Anchorage" (Davies 1984, p. 11).

Three of the 10 largest earthquakes recorded on Earth occurred in Alaska. These three account for 30 percent of all the energy released by those 10. Alaska's rate of medium-sized shocks is not higher than elsewhere. So when we combine the energy released by the largest shock with the medium-sized shocks, we find that the energy released by Alaska earthquakes is approximately 25 percent of the total energy released by earthquakes for the entire world.

When we compare the number of Alaska earthquakes and their magnitude to those in California, we find that even though California experiences a minimal amount of earthquake activity, it does greater damage because of the high population and level of urban development there (Davies 1984).

Seismologist John Davies describes several earthquake zones in Alaska. The number depends upon the shock magnitude used to identify the zone. The three major zones are the Alaskan-Aleutian Subduction Zone; the Queen Charlotte-Fairweather Transform Fault Zone; and the Interior, Northern, and Western areas. He points out that the Alaska-Aleutian Subduction Zone is responsible for the majority of the largest earthquakes in Alaska because of sudden slippage along the contact zone between the Pacific and Alaska plates. (The Alaska earthquake of 1964 occurred along this zone.) These quakes last several minutes and cause very strong shaking as well as permanent subsidence, or uplifting, over extremely large areas. They also create very large seismic seawaves and many landslides, avalanches, and submarine slumps as far away as 100 km from the epicenter.

Great earthquakes regularly occur along the Queen Charlotte-Fairweather Transform Fault Zone. They happen in strike-slip faults and crack the Earth's surface into long straight lines. Intense shaking occurs near the

fault. Interior, northern, and western Alaska experience earthquakes in faults which do not rupture the Earth's surface. They can produce strong shaking but usually last slightly less than a minute (Davies 1984, p. 8).

Western and northern Alaska have had no events greater than 7.2, but if we drop the magnitude threshold to all events greater than 6.0, a broad belt of epicenters girdles a zone from the interior area around Fairbanks-Delta Junction through western Alaska and on to Siberia. If we lower the threshold to 4.5, a broad zone of epicenters emerges. They originate in the Fairbanks-Delta Junction area, also, and lead to the vicinity of Barter Island and northeastern Alaska.

Davies tells us that two regions in southern Alaska are considered to be seismic gaps. "There is a 30 to 90 percent chance of an earthquake greater than 8.0 occurring in the Yakataga and Shumagin gap, in the next two decades . . . both areas are considered 'due' for a large earthquake, so we wouldn't be surprised if one were to occur tomorrow." The range of probabilities (30 to 90 percent) derives from different assumptions about statistics, underscoring the fact that earthquake prediction is not an exact science. Probabilities are based on patterns of information that are limited yet continually updated and refined. Davies (1984, p. 12) points out that we "understand the probabilities for large shock in the seismic gaps quite well by comparison to how well we

understand the likelihood of large earthquakes in most faults that do not lie near plate boundaries."

The importance of this lack of understanding of faults that do not lie near plate boundaries is underscored when we realize that a portion of such a fault lies in the Chugach Mountains near Eagle River, 15 miles north of Anchorage. It has moved in the last 4,000 years as the Earth release seismic tension. Analysis of the situation "leaves us with the uncomfortable and unsatisfactory conclusion that there is a possibility that there is a high probability for a large earthquake on this major fault system which runs right through Anchorage" (Davies 1984, p. 12).

Meso: Anchorage Area

The meso level of environmental analysis reveals that Anchorage could also be affected by shallow "coastal" seismic sources. Three such faults occur near Anchorage. Most studies include these faults as potential seismic risk, but because history and other information about them are sparse, their impact is estimated very conservatively (Municipality of Anchorage 1985a).

The Castle Mountain Fault, located about 40 km northwest of the downtown Anchorage area, has a conservative estimated recurrence interval for a magnitude 7.5 (maximum earthquake) of approximately 235 years. Border Ranges Fault, the main trace of which has been mapped in the northeastern

part of the Anchorage area, carries a conservative estimated recurrence interval for a magnitude 7.5 (maximum earthquake) of approximately 500 years.

Eagle River Fault (mentioned above) is closely related to the Border Ranges Fault and, therefore, shares the same magnitude and recurrence estimates. The Eagle River area has become one of the largest suburbs of Anchorage. It includes extensive residential development as well as a commercial center serving the surrounding residences.

Micro: Courthouse Site

The micro level of environmental analysis reveals that the courthouse site is located near the Fourth Avenue and L Street landslides. It is also 60 feet away from the north face of the Ship Creek Bluff (see Figure 11). The L Street slide involved approximately 30 city blocks. It extends 4,800 feet northeast along the bluff and approximately 1,200 feet at its maximum breadth across the bluff. The lateral movement of the slide was nearly 14 feet. A graben (fissure) at the top of the slide extended over about 14 acres and resulted in as much as 10 feet of vertical displacement. The L Street graben ran north-south parallel to the existing court building just west of K Street (Harding Lawson Associates 1984). Shannon and Wilson, Inc. (1964) state that the L Street slide "appeared to have been caused by loss of strength and consequent failure of the dynamically sensitive saturated sands, silts of the Bootlegger Cove

Formation, and in most instances, occurred near the top of the sensitive zone" (Harding Lawson Associates 1984, p. 14).

Experts have generally agreed for many years that the landslides resulted from major strength loss along the horizontal soil surface that formed the base of the slides. Several glacier advances have occurred in the geologic history of Anchorage. At times, Cook Inlet was ice dammed and became a lake. Sand and clay deposits covered the area in the Bootlegger Cove formation. Strength loss associated with the Anchorage slides is considered by most experts to have resulted from liquefaction of sand and silt layers in Bootlegger Cove clay. Others believe that the failure is due to other zones of highly sensitive clay (Dames & Moore 1984).

Currently some disagreement has developed over the interpretation of the cause of failure. A study done for the Anchorage Office Complex by Woodward-Clyde Consultants developed a different explanation of failure. They concluded that failure occurred due to heavy and extended shaking of relatively insensitive clay instead of degradation of easily liquefiable or sensitive material (Shannon and Wilson 1964; Seed and Wilson 1967; Michell, Houston, and Yamane 1973; Woodward-Clyde 1985).

The Anchorage Seismic Hazard Study identifies 15 different areas of Anchorage which experienced slide and slumping in the 1964 earthquake.

Many of the slides resulted in the creation of grabens, avalanches, and fragmented, rotated slump blocks. The most significant damage from the slides occurred in the Turnagain, L Street, Fourth Avenue, and Government Hill slides. Reconstruction has occurred in all the slide areas except for Government Hill. The Fourth Avenue slide redevelopment has been limited to low-rise construction.

LAND OWNERSHIP, POWER, AND THE MOMENTUM TO RECONSTRUCT

To clearly understand the courthouse site-selection decision we need to review the context in which the decision occurred. The following information presents a description of the momentum to reconstruct downtown Anchorage on land designated as high risk after the 1964 earthquake.

Macro: Vested Power

The momentum to reconstruct on high-risk land began soon after the 1964 earthquake. An in-depth article that appeared in a local paper on the thirtieth anniversary of the earthquake outlines the reconstruction events, including the response of the current governor, Wally Hickel, who was in the Tokyo airport at the time, talking on the telephone to an associate in Anchorage when the line went dead. An hour later, when Hickel heard what

had happened, he turned to a friend and said, "We're going back and rebuilding it." According to the article, that attitude was prevalent. "Ignoring the vivid example of 1964 and warnings from scientists both before and after the earthquake, Anchorage business and political leaders decided to rebuild the city on the ground most likely to fail in the next big earthquake" (*Anchorage Daily News*, 26 March, 1989, p. A-7).

Within a week, state and local architects, engineers, geologists, and scientists teamed up with technical experts from a special presidential commission and the U.S. Army Corps of Engineers to investigate the event. Their report determined that reconstruction should not occur on the slide areas. Mayor George Sharrock stated, "They made a fine report, but they almost recommended moving the town. We had a lot of controversy over that. . . . People have property, have a lot of money invested in it. . . . The consensus was, Anchorage would stay where it was."

Governor Hickel was and is a prominent developer. He returned to Anchorage two days after the earthquake and found his Turnagain home still standing. His family was living in a motel, but the springs down the hill from his house were still running. "The running water convinced Hickel that the earthquake had stabilized the ground and that it was safe to rebuild Anchorage" (*Anchorage Daily News*, 26 March, 1989, p. A7).

Hickel owned property on the west edge of downtown and in Turnagain; the two areas hardest hit by the earthquake. He was instrumental in convincing the rest of Anchorage to rebuild in these areas. The *Anchorage Daily News* article (March 26, 1989, p. A-7) quotes Hickel as saying,

I was trying to get some confidence back in the city. I announced I was going to build a hotel here.

'Here' is the site of the Captain Cook, the flagship of Hickel's hotel empire, a stone's throw from where the ground wrenched apart and moved 12 feet toward the inlet creating the graben.

From the standpoint of displaying faith in the community (stated then-city councilman, Cliff Groh), I would say Mr. Hickel did that most dramatically when he announced, earthquake or not, he was going to build his tower. And, of course, the graben which is a hole approximately 10 feet deep and perhaps 15 feet wide (between K and L Streets), is 150 feet away from where Hickel was going to build.

This decision disregarded recommendations by a local team of scientists formed immediately after the earthquake as well as the team appointed by the federal government. Both groups reported that the area was extremely hazardous for large buildings. They recommended the high-risk areas in downtown Anchorage be restricted to parks and a limited number of single-family homes. They recommended moving the city central business area back from the bluff.

According to the newspaper article, Hickel's response was, "Why?" He had hired engineers six years earlier to study the soil in the west end of

downtown. They found some areas to be weak but overall stable, and the land under his hotel went nowhere during the earthquake. Hickel said he went public with his construction plans in an attempt to restore confidence in Anchorage's shattered downtown. "You can't run from natural disaster."

Other landowners also wanted reconstruction in high-risk areas. A lawsuit was threatened against city officials when local government started buying up property for a buttress on Fourth Avenue. During the earthquake a large portion of the prestigious Turnagain-by-the-Sea subdivision had broken off the bluff and slid into the inlet. The wealthy developer of the neighborhood launched a furious assault on the geologists' recommendations against rebuilding the subdivision. "We lost enough in the earthquake, but these experts, these geologists . . . have done equal damage." His argument boiled down to what might be called the "lightning-strike" theory: Anchorage had just survived a major earthquake. Major earthquakes don't hit the same area twice. Therefore, Anchorage is safe" (*Anchorage Daily News*, 26 March, 1989, p. A-10).

City Councilman Groh agreed with Hickel in 1964 that the primary concern was to create hope and confidence in Anchorage. He chaired the City Reconstruction Commission composed of five local bankers; the head of the Chamber of Commerce; two state senators; and executives from the oil

industry, railroad, labor, contractors, and the major downtown office supply business. The *News* article comments that the four representatives of the state and federal government were "vastly" outnumbered by commercial representatives.

The federal government offered to help pay for downtown reconstruction, but it required that the bluff be stabilized through a method combining soil replacement and buttresses. It also required restriction of the type of construction to be permitted in the buttress area. The downtown business community chose to rebuild without federal support. Investors included the wealthiest and most powerful families in Anchorage, who, along with local banks, provided most of the financing. The city buttressed a four-block area of the Fourth Avenue slide area. Much of the rest of the downtown and the bluff was redeveloped without federal limitations on land designated as high risk.

Construction of Hickel's Hotel Captain Cook high-rise tower began six months after the earthquake. During the next 30 years 38 buildings were constructed on land with high potential for ground failure. Of those, 11 are on the inlet side of the graben designated as having very high potential for ground failure (Harding and Lawson 1979).

Meso: Legal Community Investment

The Alaska Court System caseload has grown as the population of Anchorage increased in the last 35 years. As the caseload grew, the number of lawyers and court support services expanded. These offices and businesses occupied space near the existing court facility, which was already located on land designated as high risk.

The Alaska court system, created in 1960 after statehood, initially operated in the Federal Building, two blocks east of the courthouse addition site. Its administrative office was located nearby. Many lawyers' offices were scattered over adjacent blocks. At that time, the court's annual caseload was relatively small (4,700), and the investment of real estate associated with court activities was limited.

The old state court building, which is in heavy use today, was occupied in 1964. Located at K Street and Fourth Avenue, it survived the earthquake but with structural damage that can still be seen inside the building. By the mid-1960s the court's caseload had doubled, and the need for office space for support services grew accordingly. Many of the small, historic homes which sat on the bluff adjacent to the district court became lawyers' offices. In 1973 the court expanded into the Boney building at K Street and Third Avenue. Anchorage caseload expanded to 47,400. In the 1970s and 1980s many

remaining nearby houses were remodeled into elegant offices or replaced by small office buildings. With the influx of people and money associated with the trans-Alaska oil pipeline, the legal community continued to invest in nearby property. By 1981 several large office complexes had arisen within four blocks of the court.

The creation of the court of appeals and caseload growth in the trial courts led to more expansion. Offices were leased in the Carr-Gottstein Building across the street from the district courthouse. In 1982 the Alaska State Legislature appropriated funds for the court system to acquire land and to plan and design a new court facility in Anchorage. The court purchased the current addition site.

By 1988 there were 78,700 cases filed in the Anchorage trial courts. The legal community was concentrated in a one-block area adjacent to the court. Ninety percent of the area was on high-risk land with either high or very high potential for ground failure (Alaska Court System 1989; Municipality of Anchorage Geotechnical Hazard Assessment Report 1979).

Micro: Adjacent Land Owners

The building which had housed the now-defunct *Anchorage Times* is located across Fourth Avenue from the addition site. Governor Hickel's Hotel

Captain Cook sits on the southwest corner of Fourth Avenue adjacent to the courthouse. It is a first-class hotel serving people from around the world, including many court-related guests. During the addition decision process, Hickel actively participated in shaping the economic future of Alaska. He is clearly one of the wealthiest and most powerful men in the state.

The Times was Anchorage's largest newspaper in the 1960s and 1970s. It had a reputation of championing the interests of downtown businesses and boosting commerce and economic expansion in Anchorage. The owners remain influential individuals in Anchorage. (Recently, the court has decided to lease the vacant *Times* building as a storage facility.)

Two modern high-rise office buildings, constructed by wealthy developers, were extensively designed and engineered to withstand earthquakes. Visually elegant, these buildings sit on land designated as very high risk. One cascades down a corner of the area where L Street bluff meets the Third Avenue bluff. The other is located at Fourth Avenue and L Street. Both L Street and Third Avenue bluffs experienced ground failure and grabens during the 1964 earthquake. These buildings are designed to fall in one piece in case of ground failure. Geotechnical studies done for the courthouse addition refer to information prepared to evaluate design of these buildings.

Two wealthy, politically active families constructed a high-rise office building located at the corner of K Street and Third Avenue, directly on a graben. The court currently is renting space in that building. The building is designed to meet minimum code requirements. The two families who own the building are also responsible for many of Anchorage's largest business malls and prestigious residential developments. One of the residential subdivisions they have developed sits on land which is partially designated as high risk. There are several other high-rise buildings within five blocks of the courthouse addition. Many are built directly on the graben.

Building owners and developers generally express a confidence in buildings located on high-risk land near the courthouse addition. Walter Hickel's office was on the second floor of the Captain Cook until he was elected governor in 1990. His son's office is in the hotel. One builder defends the safety of his tower in the *Anchorage Daily News* (26 March, 1989, p. A-10). "Buildings built properly can withstand an earthquake," he said, "and if [the] tower ever does go into the inlet, it'll be in one piece."

The article goes on to point out that other engineers echoed the developer's argument concerning bluff construction. The article also quoted local geotechnical engineers and state seismologists who questioned the

possibility of any building withstanding ground failure. Throughout the reconstruction processes, local geologists and geotechnical engineers and seismologists have expressed extreme concern over bluff construction. Two active spokespersons expressing concern regarding the addition site have been a former state seismologist and a local geotechnical commission member. Their concerns are summarized in the Information Backdrop section of this chapter.

Yet, on a micro level, the seismic issues do not appear to concern daily users of the courthouse. Past Planning and Zoning Commissioner Alicia Iden commented, "In all the times we reviewed development on the high-risk bluff area, I do not recall a single person spoke as just a plain citizen who was concerned about seismic issues. We heard many concerns from experts, but the public users of the building and the employees just did not seem to care" (Iden 1989).

Iden also stated that she raised the issue of the city's liability associated with persons incarcerated at the court facility. "What if there is an earthquake and the building begins to fall apart with people locked up in cells inside? I raised this issue. Yet there appeared to be too much momentum behind the project to be concerned about potential liability."

Former city councilman Groh commented, "Is the sky going to fall? I don't know. Those people (who say the bluffs may fail) aren't laying their

money on the line saying it isn't going to happen" (*Anchorage Daily News*, 26 March, 1989, A-11).

INFORMATIONAL BACKDROP

This area of analysis provides a glimpse at the amount and type of information available to the Anchorage community regarding earthquake risk. An ongoing flow of expert opinions and media information regarding earthquake risk has been available and published since the 1964 earthquake. Key information also has been available to investors, experts, and decision makers related to site selection for the courthouse addition on land designated as high risk.

The sheer volume of information related to this topic is staggering-- approximately 8,000 pages of general information associated with seismic issues in Anchorage and 3,000 pages of information related to the courthouse addition decision. This selective analysis is designed to provide a review of the most pertinent information. It is inclusive in terms of presenting various perspectives on the interpretation of earthquake risk in Anchorage. An overwhelming amount of scientifically based data supports the assertion that Anchorage is constructed in a seismically high-hazard area. Also, a large percentage of the information associated with the courthouse addition

indicates that the potential for ground failure at the site during an earthquake is relatively high.

Macro: News Media Earthquake Information

Review of media coverage for the past 12 years reveals continuous flow of information regarding Anchorage's high potential for major earthquakes and the areas of the city at high risk of ground failure during such quakes. The news media, particularly television and newspapers, regularly report earthquake-related information. During the last 10 years more than 350 articles have appeared just in local newspapers that in some way dealt with issues related to earthquake risk. All three local TV news programs have run major stories on earthquake potential and risk in Anchorage.

Every five years the community revisits the 1964 Alaska earthquake through media coverage. Recently, a local TV station completed a weeklong series marking the thirtieth anniversary of the quake. The series included tape and video recordings of the original event, interviews with individuals who survived the quake, and review of the potential for future earthquakes.

At five-year intervals, the anniversary of the '64 quake has been marked by major newspaper articles covering three and four pages presenting seismic dangers to residents. Some articles have included full-page maps showing the

area's slide zones and full-page diagrams explaining how the specific slide in Anchorage occurred and how the Earth moves during an earthquake.

Examples of headlines in the *Anchorage Daily News* read, "Danger Still Lurks Beneath Surface," "Experts: Quake Could Hit Any Time," "Quake Risk Moves Alyeska Company Decides Bragaw Building Unsafe, Head to BP," "Rattled Residents Worry About the Big One," "Home May Go Up Where They Slid Down," "Earthquake Prediction Makes a Point: We're Not Ready," and "A City on the Edge." The *Anchorage Times*' stories also served as a reminder of the potential and impacts of earthquake. Examples are, "Recording Witnesses to Terror of Quake," "At 5:36 p.m., the Earth Let Loose," "Aftershocks Aplenty," "Lives, Dreams Were Lost--Staggering Destruction, Death Toll Could Have Been Worse," "Anchorage Wastes Little Time Starting to Rebuild its Devastated Downtown." The review shows that *Times* coverage primarily focused on documenting the earthquake and featuring anecdotal stories about what occurred. It also extensively covered the rebuilding process. The *Daily News* has provided a large amount of scientific information about earthquake-related issues in Anchorage, focusing on community safety in high-risk areas.

The media's approach and perspective presented have changed over time. For example, the *News* story in March 1989 marking the twenty-fifth

anniversary of the earthquake, implies that any construction on high-risk bluff land is dangerous. The story quotes then-state seismologist John Davies as saying,

I think there is geological evidence you don't need a 1964-sized quake to trigger landslides . . . Maybe a garden variety 7.5 will do. ... I think it's obvious that when the next big earthquake occurs that triggers landslides, there will be much more damage. What happens to a five-story building on a cliff when the cliff goes away? It collapses. Or topples. Or slides down the bluff. What happens to the people inside? Nobody knows for sure. Maybe some of them get out. Maybe a lot of them get hurt. Maybe some of them die. The building codes are quite sound. ... The problem is that the building codes assume you are building on stable ground. If the ground goes away, ... basically, you've got a problem. (*Anchorage Daily News*, 26 March, 1989, p. A7)

Five years later, a *News* article marking the thirtieth anniversary seems to conclude that the land is less dangerous.

Exactly what might happen can't be predicted with any certainty, ... but seismologists and structural engineers say Anchorage probably wouldn't experience as many of the spectacular landslides and ground failures as occurred during the Good Friday Earthquake. ... Those major ground failures all began about two minutes into the earthquake, says geologist Rod Cornbellick. My own feeling is that we'd see less ground failure and perhaps more structural damage to buildings. ... Generally, there are some buildings in Anchorage that are of concern, though I'm not about to predict collapse of any of them, adds structural engineer Chilton. There is not any way to exactly predict it--there is no way. ... What I would expect to see would be a lot of nonstructural damage--a tremendous amount of nonstructural damage. (*Anchorage Daily News*, 27 March, 1994, p. H-12)

On a macro scale, another common form of information concerning earthquake risk arises from the continuing earthquake activity. The Tsunami Warning Center in Palmer, Alaska, monitors earthquake activity in Anchorage and the surrounding area. In an interview for this research a spokesperson from the center estimated that there are "roughly two dozen earthquakes a year (give or take 20 percent) that are felt by residents in the Anchorage area. Many, many more earthquakes occur, than are felt."

Meso: Professionally Related Earthquake Information

This section examines the technical information available to the community regarding earthquake potential in the Anchorage area. A large amount of earthquake-related information has been generated since the 1964 earthquake. Federal, state, and local governments have presented numerous studies and public and professional seminars on the subject. At the federal level, information has been produced by U.S. Geological Survey, the National Science Foundation, and Coastal Zone Management organizations. At the state and local levels, information has been prepared by the University of Alaska, Department of Emergency Preparedness, Municipality of Anchorage Planning Department, Alaska State Housing Authority, and private consulting agencies.

The research has not identified exact numbers of public and professional seminars focused on earthquake issues during the past 12 years, but there have been many. Samples of topics over the years have ranged from "Earthquake Alaska--Are We Prepared?" to evaluating where the community is 25 years after the big quake, to earthquake liability assessment, to the presentation of geotechnical hazards assessment. Review of the past six years shows that at least seven earthquake-related seminars have been presented. The intended audiences of most seminars were professionals, public officials, and political decision makers. In most cases the seminars have been open to the public. Information from the seminars has been reported on radio and television news as well as in the newspaper.

This study reviews selected information that has contributed to the general knowledge associated with seismic issues in Anchorage. Five years before the 1964 earthquake, geologists Robert Miller and Ernest Dobrovolny assessed Anchorage slide potential. In their 1959 report, titled "Superficial Geology of Anchorage and Vicinity," soil studies indicated that shock associated with earthquakes would start the movement of materials which normally appear to be stable. They identified specific bluff areas which were most likely to slide during earthquake shock. Many areas they identified were

the same bluff areas that failed during the 1964 earthquake (Miller and Dobrovolny 1959, p. 128).

A large amount of in-depth information was generated very soon after the earthquake by the Federal Reconstruction and Development Planning Commission for Alaska. The commission established a Scientific and Engineering Task Force. Numerous reports outlined the findings of the task force and examined the reconstruction. The National Science Foundation prepared an eight-volume study covering geology, seismology and geodesy, hydrology, oceanography and coastal engineering, engineering, human etiology, and summary and recommendations. After much study, the task force recommendations included the designation of "high-risk zone" for the bluff area which experienced ground failure during the earthquake. They proposed an extensive stabilization program for those areas before they could be classified as nominal risk (U.S. Geological Survey 1966).

One of the task force recommendations was that those areas of Fourth Avenue, First Avenue, L - K streets, Turnagain Heights, and Government Hill that slid during the earthquake be stabilized. They also recommended that restrictions be placed on construction or rehabilitation in specific high-risk areas (U.S. Geological Survey 1966). As mentioned in Chapter 1, Overview of Alaskan Earthquake section, the task force recommendations were ignored.

In 1985 the Municipality of Anchorage assessed the potential impacts of a repeat 1964-type earthquake. Unique aspects of the 1964 earthquake included (1) long-period motion caused by deep, subduction zone sources; (2) a very long four- to seven-minute duration of strong shaking; and (3) the Anchorage bluff area ground failure due to overconsolidated, sensitive, silty clay layers. They estimated the return period to be at 200 years \pm 100 years.

Too many reports exist about earthquake risk in Anchorage to review in this study. A document prepared by the U.S. Geological Survey for a "Workshop on Evaluation of Regional and Urban Earthquake Hazards and Risk in Alaska" refers to more than 40 separate studies relating to seismic issues. Sample titles include: "Status of Earthquake Hazard Research in the Anchorage Area and Upper Cook Inlet, Alaska," "Sensitive Clays in the Bootlegger Cove Formation," "Seismic Hazard Studies," "Earthquake Damage--1964 Lessons Learned and Relearned," "Recent and Anticipated Changes in Utilization of Earthquake Hazard Information for Siting Considerations; Anchorage, Alaska," "Present Planning for and Management of Seismic Risk Mitigation," "A Planning and Administrative Model for Risk Mitigation," "Legal Liability Problems in Earthquake Preparedness," "Alaska Geology Earthquake Hazards," "Engineering Geology/Environmental Geology, Anchorage," "Earthquake Hazards Studies, Upper Cook Inlet, Alaska," and

"Evaluation of Ground Failure Susceptibility, Opportunity and Potential in the Anchorage, Alaska, Urban Area" (Hays and Gori 1986).

The Anchorage Seismic Hazard Study (1979) prepared by the Municipality of Anchorage provides an inventory of all significant geotechnical data associated with geologic hazards. It analyzes seismic data and designates areas of potential hazards on a series of municipal maps. That study included a "Geotechnical Hazards Annotated Bibliography" for Anchorage which outlined 127 separate reports related to the Anchorage Area Geotechnical hazards. This research uncovered more than 40 major studies prepared since 1979 addressing Anchorage area seismic issues.

In 1979 the Municipality of Anchorage created the Geotechnical Advisory Commission to provide professional advice regarding geotechnical matters. The commission was designed to serve the mayor, assembly, heads of executive departments, the Planning and Zoning Commission, and the Platting Board. Its mission included making recommendations for community program changes to reduce geotechnical hazard as well as sponsor education programs for use on hazard mitigation and recommend studies that the municipality should undertake regarding geotechnical hazards. The commission played an important role in assessing the seismic safety of the courthouse addition. Commissioners carefully reviewed all the reports associated with the

courthouse seismic issue and provided a critical review of the information through the decision process. They have been involved with the approved courthouse addition design to insure that it meets all seismic structural requirements.

This research shows a tremendous amount of information indicating that the Anchorage area is subject to significant earthquake activity and that specific geological characteristics of Anchorage's soils require special consideration for hazard mitigation. Finally, it indicates that the combination of geology and seismicity can result in ground failure on specific bluff sites in the Anchorage area.

Micro: Courthouse-specific Seismic Examination

A series of important studies was prepared and reviewed specifically for the courthouse addition. Harding Lawson Associates (1984) prepared a geotechnical (soils) report for McCool-McDonald of Anchorage. McCool-McDonald was hired by the court to prepare schematic drawings of the proposed structure. This work builds upon previous work done by Harding Lawson regarding the assessment of geologic hazards in the Anchorage area. The court-related Harding Lawson report (1984, pp. 1-5) observed,

Future earthquakes similar to the 1964 earthquake may reactivate the "L" Street Landslide west of the site. This slide could enlarge and develop a new graben east of 1964 failure limits ...

Regarding the Ship Creek Bluff, we estimate that for an earthquake with a magnitude about 7.5 and peak ground accelerations not exceeding 0.2 gravity the site will experience relatively small displacements (less than 1/2 foot). For earthquakes greater than magnitude 8 and occurring close to the site, ground displacements could be tens of feet.

A slide of the Ship Creek Bluff or an extension of the "L" Street Slide or both would likely effect the court buildings. If a graben or similar vertical ground movement or large horizontal ground displacement occurs in the immediate vicinity of the proposed Courthouse Addition, the building will most likely be damaged regardless of the type of building foundation.

The Harding Lawson report concluded:

Based solely on geotechnical considerations, and assuming that future stabilization of the bluffs north and west of the sites will not be accomplished, we conclude that the site is not suited for major public occupancy facility because of potential for ground failure during a large earthquake.

Later in 1984 the court hired Dames & Moore, another engineering and consultant firm, to provide a further evaluation of the site. These engineers were asked to evaluate the Harding Lawson report and draw upon other studies, including the geotechnical report prepared for a proposed state office complex that was never funded for construction.

The Geotechnical Advisory Commission had, in coordination with state experts, recently developed an assessment tool to help evaluate acceptable risk associated with site selection. They surveyed more than 100 experts in

earthquake design throughout the country. The resulting commission presented an acceptable level of risk rating system based on the evaluation of potential loss of property life, type and use of building, and seismic and geological factors. This rating system was used to establish an acceptable risk level for the courthouse addition. That risk level was then compared to three sites already deemed acceptable locations for a new state office complex. None of the three state office complex sites was on bluff area.

The court system initially requested Dames & Moore to review the Harding Lawson report and make its own evaluation of the site. Dames & Moore (1984) agreed with the Harding Lawson report, but suggested that further soil studies might improve the evaluation. They observed,

The proposed Anchorage Courthouse site is located between Third and Fourth Avenues and H and K Streets in what might be considered a promontory between the Fourth Street and L Street slides. It is close to a northerly bluff which itself appears to be the scarp of an old slide of indeterminate origin. The proposed site thus appears to be in a relatively exposed position. It is clearly threatened by any reactivation of the L Street slide and, although fairly well removed from the Fourth Avenue slide location, the possibility of a similar failure taking place beneath the bluff to the north of the site cannot be discounted.

Dames & Moore concluded:

It might thus be concluded that there is a significant risk of serious earthquake damage to a structure at the proposed site ... It is possible that with greater information and understanding regarding these properties and behavior, either a more favorable

assessment of the slope stability would result ... (Dames & Moore 1984).

On the recommendation of the Geotechnical Advisory Commission, the court system retained John H. Wiggins Company to perform a risk analysis for the proposed project. Wiggins and Taylor (1984) compared four (4) alternatives regarding site location of the courthouse addition.

- | | |
|-------------------|--|
| Alternative (i) | No expansion - leased space to meet court needs. |
| Alternative (ii) | Continue as planned using the existing court facilities and a new addition all located in the Central Business District. |
| Alternative (iii) | Expand elsewhere - use the existing court facilities and locate the court addition elsewhere on stable ground. |
| Alternative (iv) | Construct total new facility elsewhere - The entire court system would be relocated to stable ground. |

Based on an evaluation of the liability, court needs, seismic exposure, economic cost, and constraints for the project within the Central Business District.

Wiggins concluded:

It appears to be clear from the preceding discussion that alternative iv located elsewhere than the central business district (say mid-town) is the most logical choice provided that no costs in the form of liability, responsibility or attachment in any way lingers with the court system.

Moving the entire court system away from downtown implied serious economic impact on the surrounding commercial properties. Besides, the State would still have a potential liability for older court buildings already constructed on the site. The Downtown Development Corporation, representing a group of concerned businesses, retained Woodward-Clyde Consultants to reevaluate the site and the Harding Lawson and Dames & Moore reports. Woodward-Clyde's findings agreed with those of the two preceding evaluations. In its report to the Downtown Development Corporation, Woodward-Clyde reiterated its acknowledgments of the potential for ground failure at the courthouse addition site, stating:

In general, structures can be designed to withstand almost any reasonable level of earthquake shaking but cannot be designed to withstand significant earthquake-induced ground displacements such as those observed in the 1964 "L" Street and Fourth Avenue Slides. (Municipality of Anchorage 1985b)

Woodward-Clyde also distinguished between the courthouse addition site and the state office complex site. They neither agreed nor disagreed with failure probabilities listed in the previous reports for the courthouse. Woodward-Clyde did acknowledge the proximity of the courthouse site to the bluff just north of Third Avenue and tentatively suggested that the courthouse site was more vulnerable to seismically induced ground failure than were the two sites considered for the state office complex (Municipality of Anchorage

1985b; Woodward-Clyde letter 1985; Woodward-Clyde 1985). This acknowledgment is important because later consultants Shah and Kavazanjian used the acceptable risk level analysis tool developed for the a state office complex site as a tool to evaluate the courthouse addition site. They then compared levels of risk of the courthouse with risk that had been established as acceptable for the state office complex site.

Woodward-Clyde suggested that instead of making a decision based on the previous data and evaluations systems established to determine risk that was acceptable for the state office complex, the court should proceed with an expanded soils investigation to reevaluate the seismic stability of the court site. They believed that levels of acceptable risk for the courthouse addition "should be established by the court system or its representative independent of the geotechnical consultants" (Woodward-Clyde 1985, p. 3).

In an effort to further clarify the seismic stability issue, the court hired consultants Haresh Shah and Edward Kavazanjian of Stanford University to perform field testing and to reassess the risk for seismically induced ground failure. These consultants' conclusions about the courthouse site differed significantly from previous studies. Kavazanjian and Shah stated that the

... site is as safe, if not safer, than the Anchorage Office Complex site, a site ... at which the seismic risk has previously been judged acceptable ... with proper design precautions, the threat of loss of life would be no greater at the proposed courthouse site than at

any other site in the highly seismic Anchorage environment. ...
the incremental risk of structural damage due to landslides is
small compared to the background risk due to strong shaking.
(Municipality of Anchorage 1985b)

After reviewing the Shah and Kavazanjian report, the Geotechnical Advisory Commission prepared a detailed geotechnical summary (1985) which "expressed concern over conflicts between the Shah and Kavazanjian report and the previous reports." They questioned soil sampling technique and interpretation used by Shah and Kavazanjian, and they questioned the fact that the potential for bluff sliding approximately 60 feet north of the site along Third Avenue was not included in their analysis. Shah and Kavazanjian only included the potential for reactivation of the L Street slide area two blocks to the west. The commission expressed great concern over the fact that the omission of the Third Avenue slide led Shah and Kavazanjian to conclude that the potential for ground failure at the site was similar to that determined for the proposed site of the state office complex, which is several blocks away from the bluff that failed along Fourth Avenue during the 1964 earthquake.

The commission disagreed with Shah and Kavazanjian's assertion that the threat to life safety or to building damage for the courthouse addition site was no greater than the risk of siting the building anywhere else in the Anchorage area. They also disagreed with the report's "premise that earthquake shaking strong enough to cause ground failure at the courthouse

site would be strong enough to cause severe damage or collapse of buildings throughout the Municipality" (Municipality of Anchorage 1985b, p. 9).

Their disagreement was based on the damage patterns that the commission recognized had occurred during the 1964 earthquake along with historical behavior of structures during severe earthquakes in other parts of the world. They stated that a more obvious conclusion from the 1964 earthquake is that the earthquake can cause large-scale landslides within the municipality, and buildings found within gross ground failure can experience significant damage or collapse.

The commission was not convinced that the site of the proposed expansion was as safe or safer than other sites much farther away from the bluffs. Nor were they convinced that estimates of ground failure potential presented in the Shah and Kavazanjian report were reasonable since the soil layers tested may not have been ones critical to the analyses. The commission concluded that "the question of seismic stability raised by the likelihood that inappropriate soil strength parameters were used in their analysis was exacerbated further by apparently not addressing the potential for slope failure north of the site - the direction of closest proximity (60 feet) to a bluff face, and an area identified as an old slide in previous reports" (Municipality of Anchorage 1985b, p. 9).

The commission's conclusions were supported by noted seismic experts in the state. The chief engineer of the geology section of the Alaska Department of Natural Resources and the state seismologist both expressed clear concerns regarding the Shah and Kavazanjian analysis of the court site. Both indicated that previous reports were better tools for evaluating the site's potential. They submitted a detailed analysis of each report to the Geotechnical Advisory Commission. They questioned Shah and Kavazanjian's assumptions and indicated that the preponderance of information would classify the proposed site as not suitable unless it was stabilized.

Jay English of Harding Lawson commented on the review process:

We concluded in writing in a report that I co-signed, and put my Alaska registration number on, that it's just not a proper site for public occupancy where people had no choice to go into the building or not, and where there would be prisoners incarcerated. Art Snowden, the Court Administrator, just did not like our conclusions, so he hired a consultant from Stanford who arrived at some different conclusions. (*Anchorage Daily News*, 9 May, 1988, p. 9)

In 1984 the Geotechnical Advisory Commission recommended against proceeding with the proposed courthouse addition unless stabilization of the site was accomplished beforehand. This recommendation was forwarded to the Planning and Zoning Commission for consideration of a conditional use permit required for the courthouse project. In 1986 the planning commission granted the Alaska State Court System a conditional use permit after almost four years

of review. The Planning and Zoning Commission requested that the Geotechnical Commission continue to work with the court system to refine design standards which would result in increased seismic safety for the building.

The court hired Kavazanjian and Shah to establish design criteria. Those criteria used a less conservative earthquake reoccurrence period established by Shah. It compared that reoccurrence to acceptable reoccurrence rates established for the state office complex site-selection process. The Geotechnical Advisory Commission approved only the *design criteria* in 1986. The court hired Woodward-Clyde as project architect to do a final geotechnical investigation, including design considerations. Woodward-Clyde subcontracted that study to McCool-McDonald. The resulting report drew upon earthquake return (or reoccurrence expectations) selected by Shah and another associate in 1987. It then compared the return figure with the acceptable risk level that had been established as acceptable in the state office complex site selection process.

The study also made comparisons between the site proposed for the state office complex and the Fourth Avenue slide area and stated that the courthouse site "appears to be somewhat more overconsolidated and, therefore, stronger, than those under the 1964 Fourth Avenue slide area and the two candidate sites for the State office complex. However, these clays in the

vicinity of the site are similar in the overconsolidation state to those under the

"L" Street slide area." Woodward-Clyde (1987, p. 6-3) found:

... With the present understanding on the mechanism of graben formation, the potential locations of grabens in general can be anywhere within the project site area. However, on the basis of the displacement patterns observed in the northwestern parts of the downtown Anchorage, the potential for north-south running graben is judged to be higher in the middle half of the project site; similarly, the potential for east-west running graben is judged to be higher in the middle to southern half of the project site.

The report does not declare the site suitable for development. Instead, it suggests that data indicate the particular site "appears" to have "somewhat" stronger clay than the state complex site. The study also referred to a recent model study which implied that 1964 ground failure only occurred after prolonged shaking. Finally, it compared the courthouse addition site level of risk with those of the state office complex sites. (The office sites are not on a bluff. The ground failure bluff issue was reduced because the report tied failure to the prolonged shaking of the 1964 earthquake. The possible reoccurrence of an earthquake that lasts that long was defined as remote.) The Geotechnical Advisory Commission accepted Woodward-Clyde's report and Shah's reoccurrence methodology, but it expressed concern regarding some aspects of the data.

In 1987 the Geotechnical Advisory Commission passed the following resolution Number 87-04:

A RESOLUTION RECOMMENDING CONSTRUCTION OF THE STATE COURTHOUSE EXPANSION IN CONFORMANCE WITH THE SEISMIC CRITERIA AND INFORMATION DEVELOPED BY THE CONSULTANTS TO THE ALASKA COURT SYSTEM.

WHEREAS, the Alaska Court System has cooperated with the Geotechnical Advisory Commission in providing reports and responding to requests, and

WHEREAS, the geotechnical report prepared by Woodward-Clyde has addressed the concerns of the Geotechnical Advisory Commission, but

WHEREAS, questions remain about the data upon which the geotechnical report is based, and

WHEREAS, the Commission has previously reviewed and approved the design criteria developed by Kavazanjuian [sic] and Shah for the State Courthouse expansion.

NOW, THEREFORE, BE IT RESOLVED, by the Municipal Geotechnical Advisory Commission that the design and construction of the Alaska State Court System expansion on Blocks 29 and 30 of Anchorage Original Townsite be in conformance with both the seismic design criteria established by the Kavazanjian and Shah report and the information contained in the Woodward-Clyde geotechnical report.

PASSED AND APPROVED by the Municipal Geotechnical Advisory Commission this 5th day of May, 1987.

The following 10 figures were prepared by Woodward-Clyde Consultants (1987) as part of their final geotechnical investigation. They provide a graphic explanation of the site and its relationship to the surrounding seismically sensitive area. They also display how the ground failure occurred on the bluff in the 1964 earthquake.

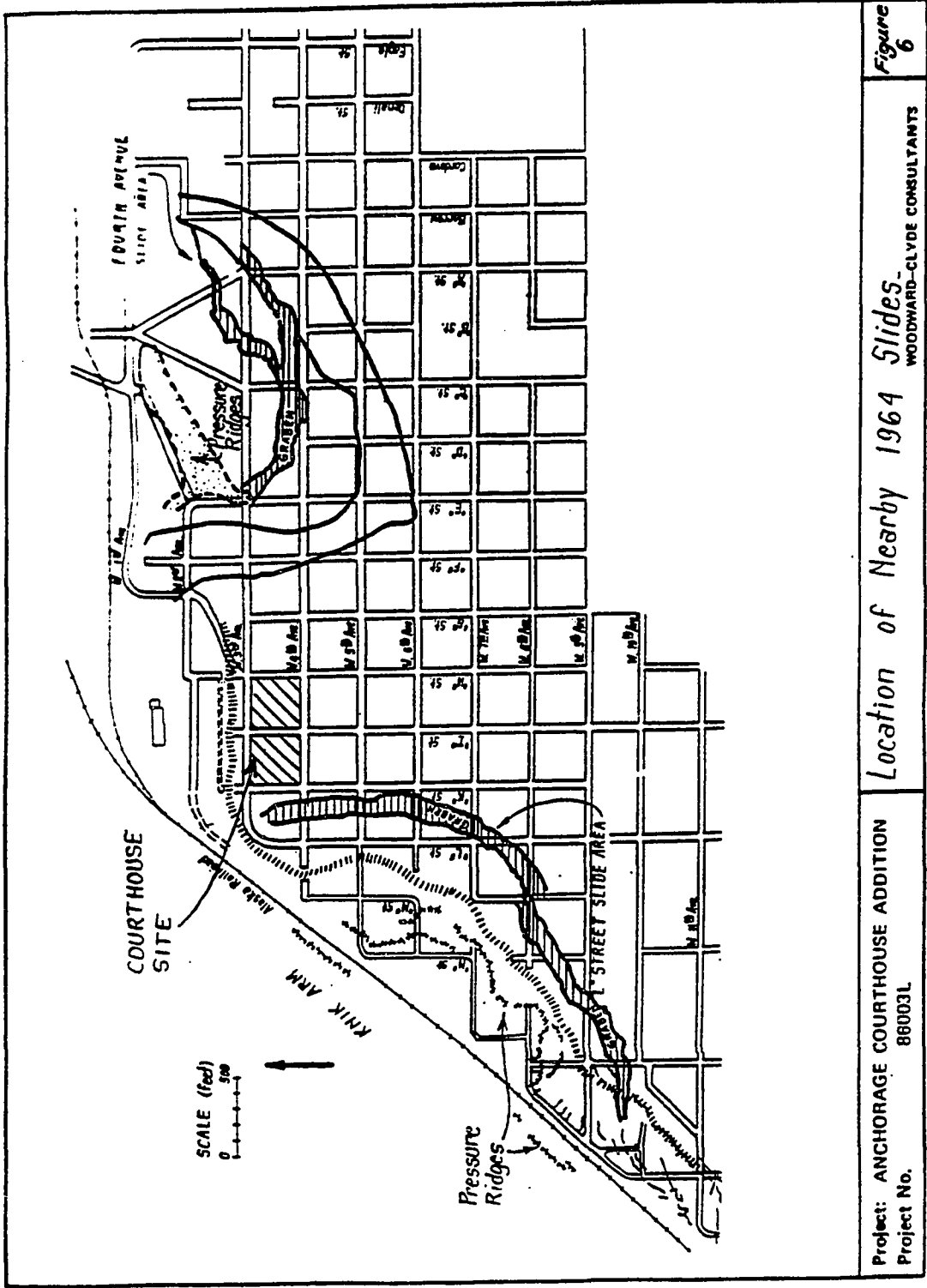
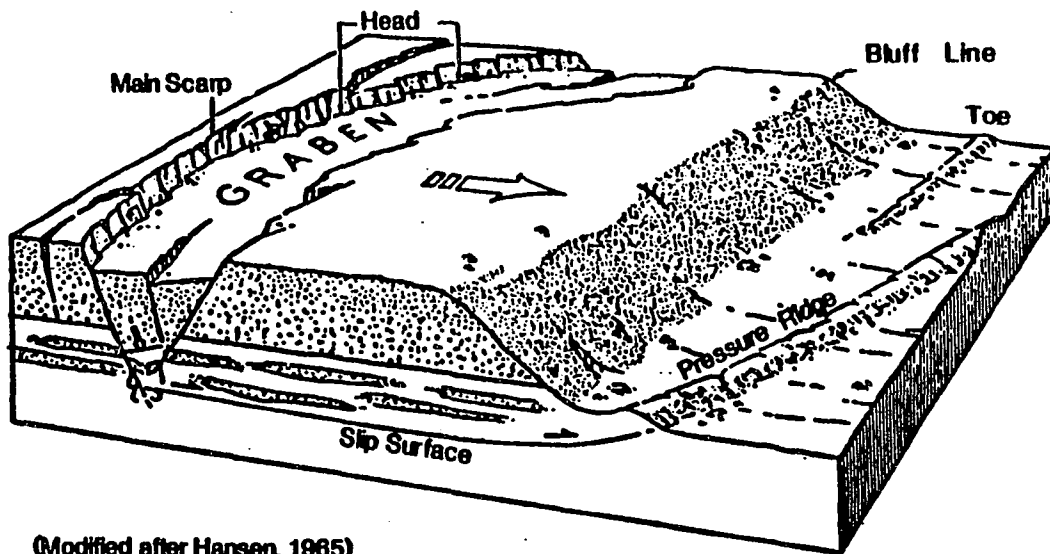


Figure 6

Location of Nearby 1964 Slides.
WOODWARD-CLYDE CONSULTANTS

Project: ANCHORAGE COURTHOUSE ADDITION
Project No. 88003L



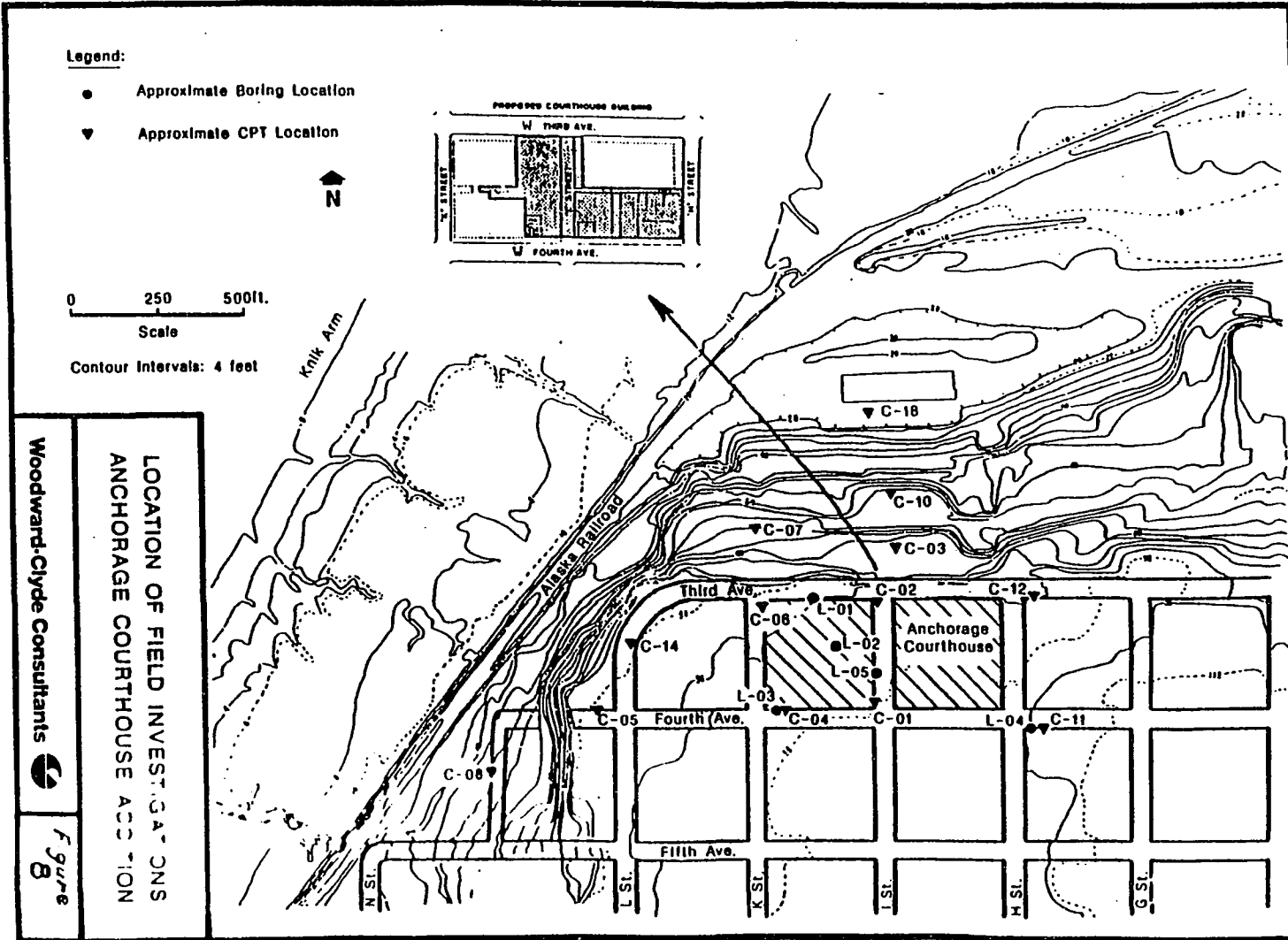
(Modified after Hansen, 1965)

Project: ANCHORAGE COURTHOUSE ADDITION
Project No. 86003L

Translatory Slide

WOODWARD-CLYDE CONSULTANTS

Figure
7

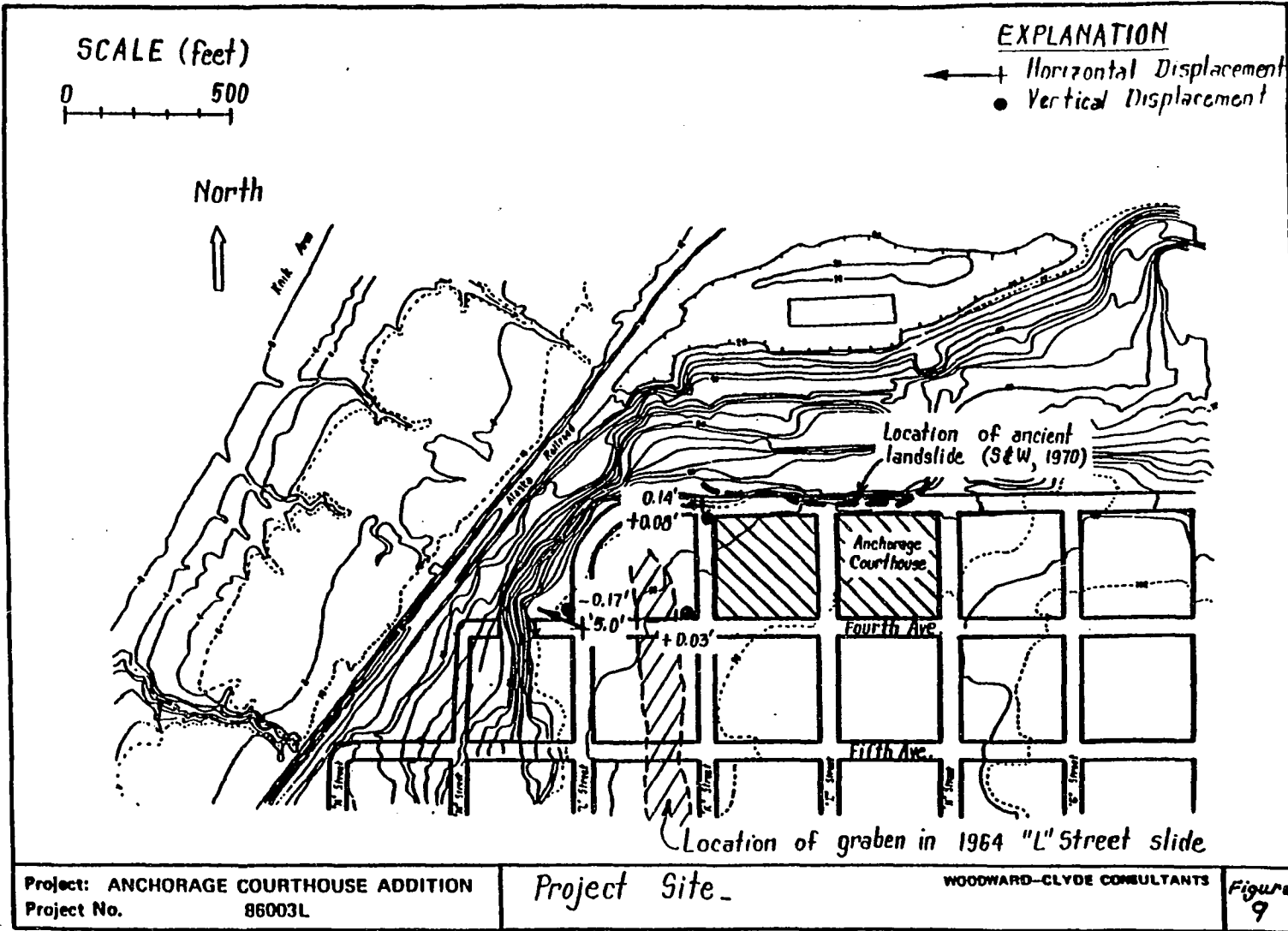


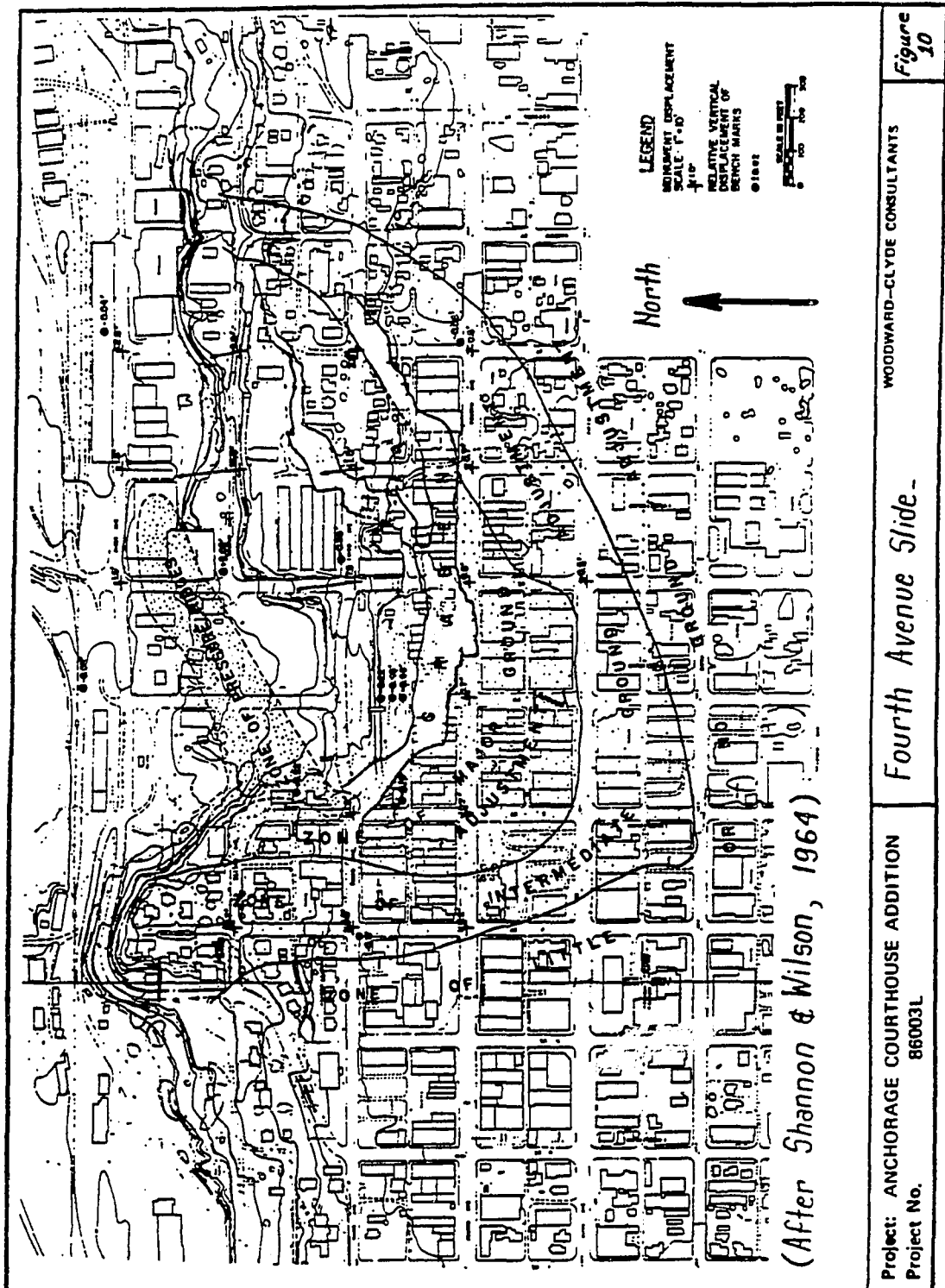
Woodward-Clyde Consultants

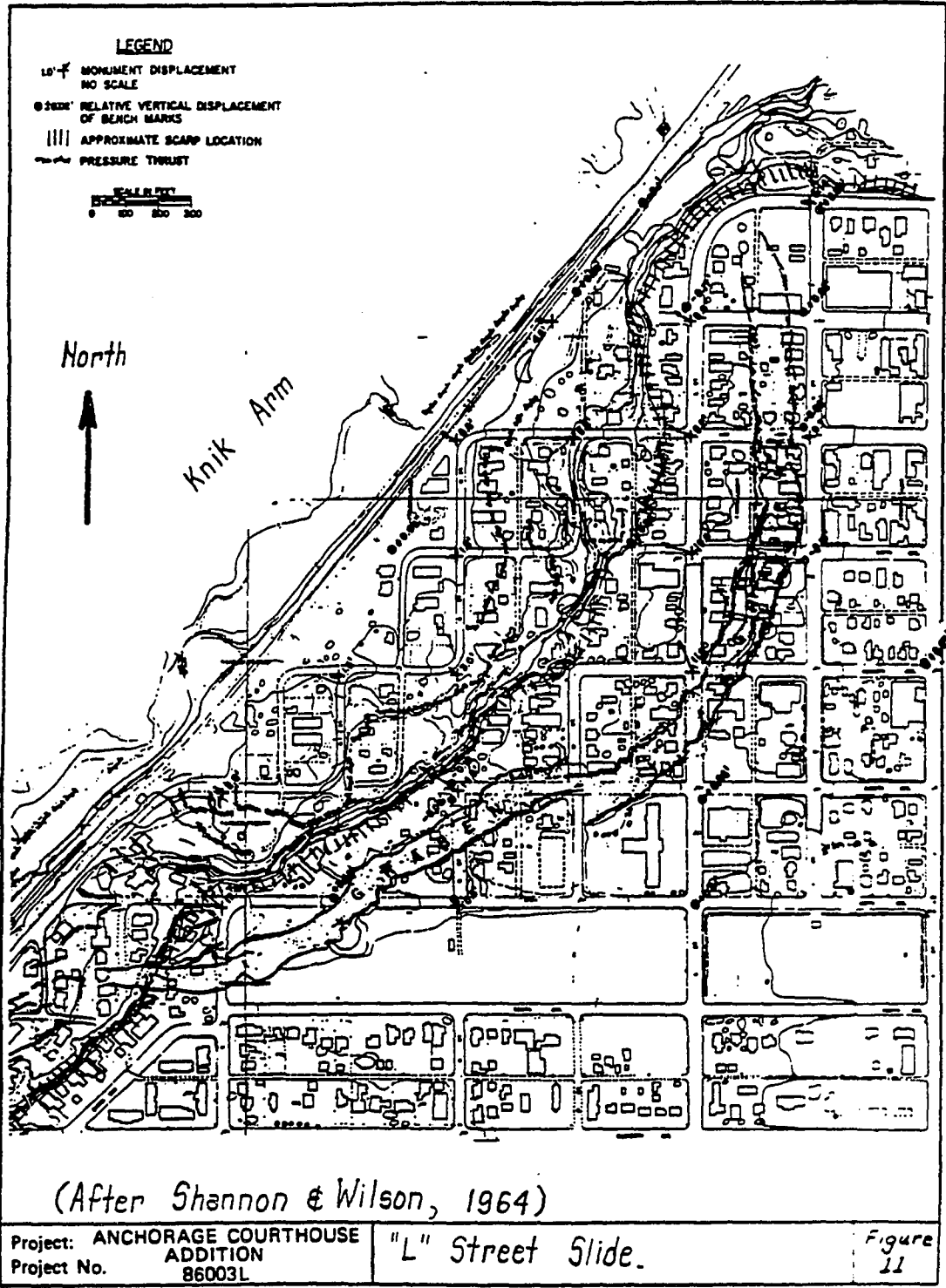


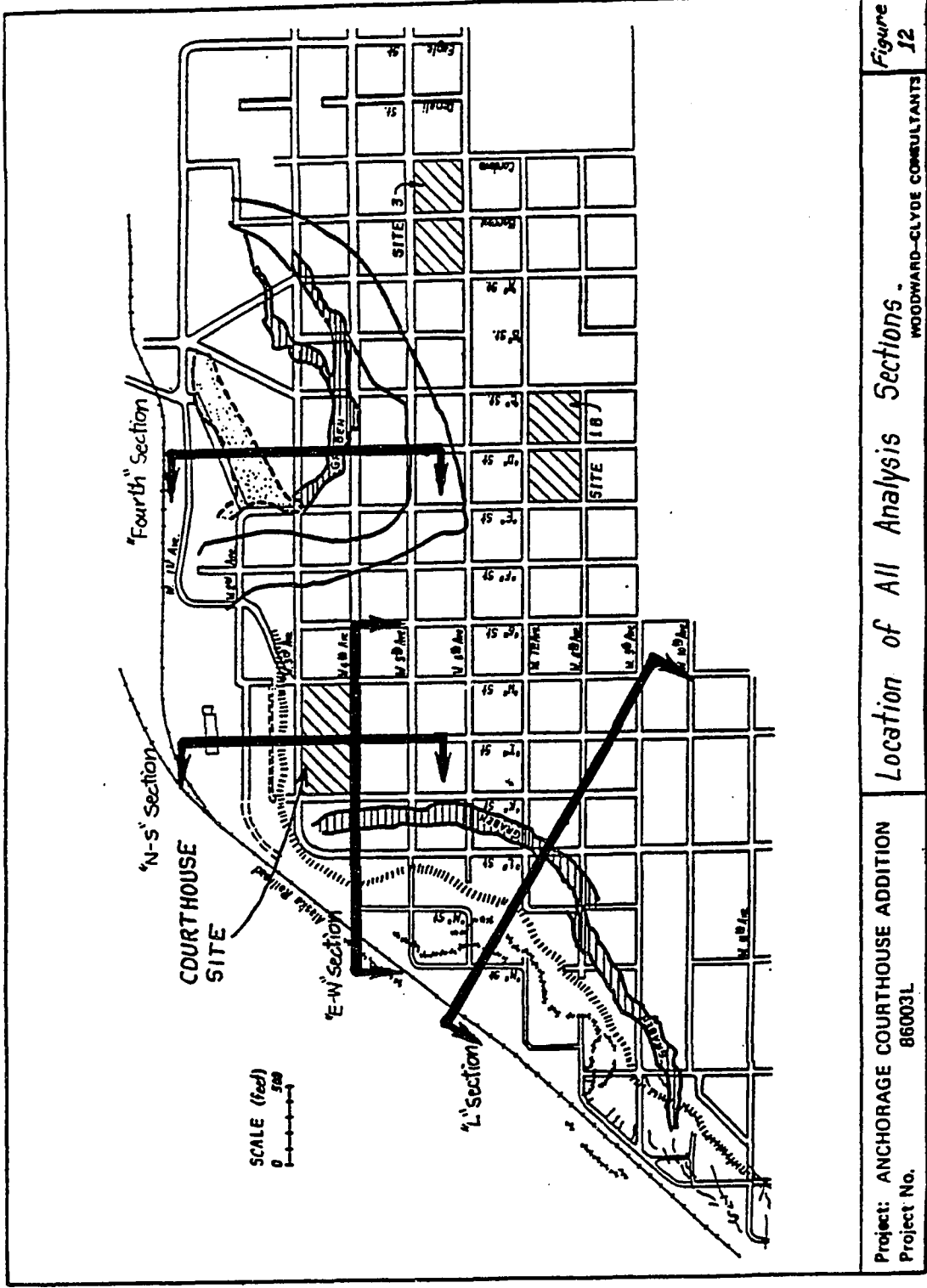
Figure 8

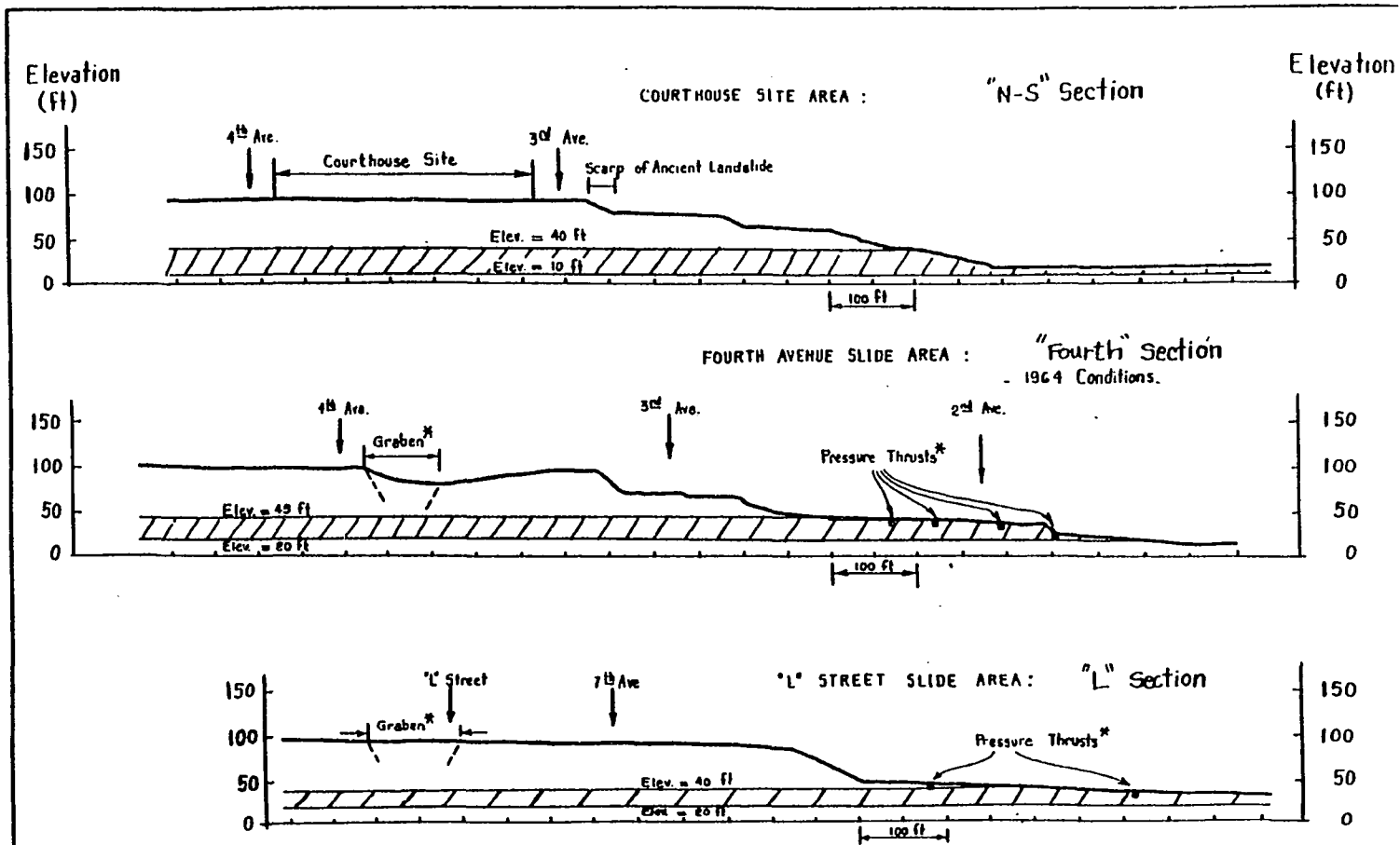
LOCATION OF FIELD INVESTIGATIONS
ANCHORAGE COURTHOUSE ADDITION









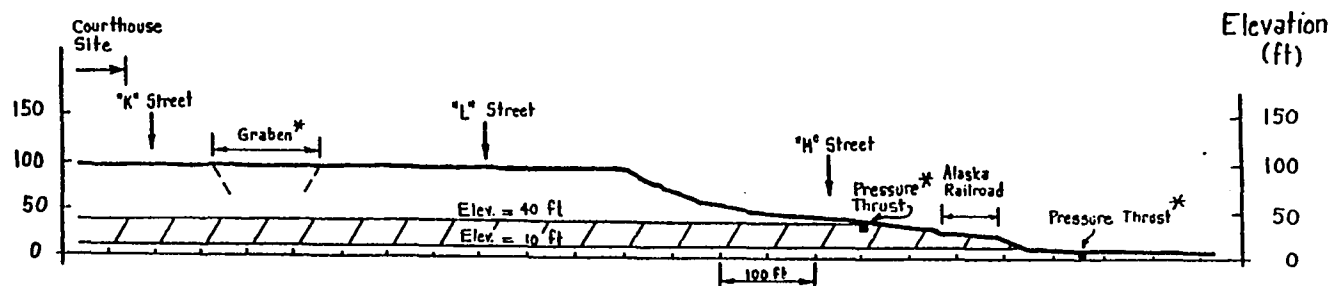


(*) Note Approximate location during the 1964 earthquake.

Project ANCHORAGE COURTHOUSE
Project No. 86003L

Analysis Sections Used in the N-S Seismic Stability
Evaluation of the Courthouse Site. WOODWARD-CLYDE CONSULTANTS.

Figure 13



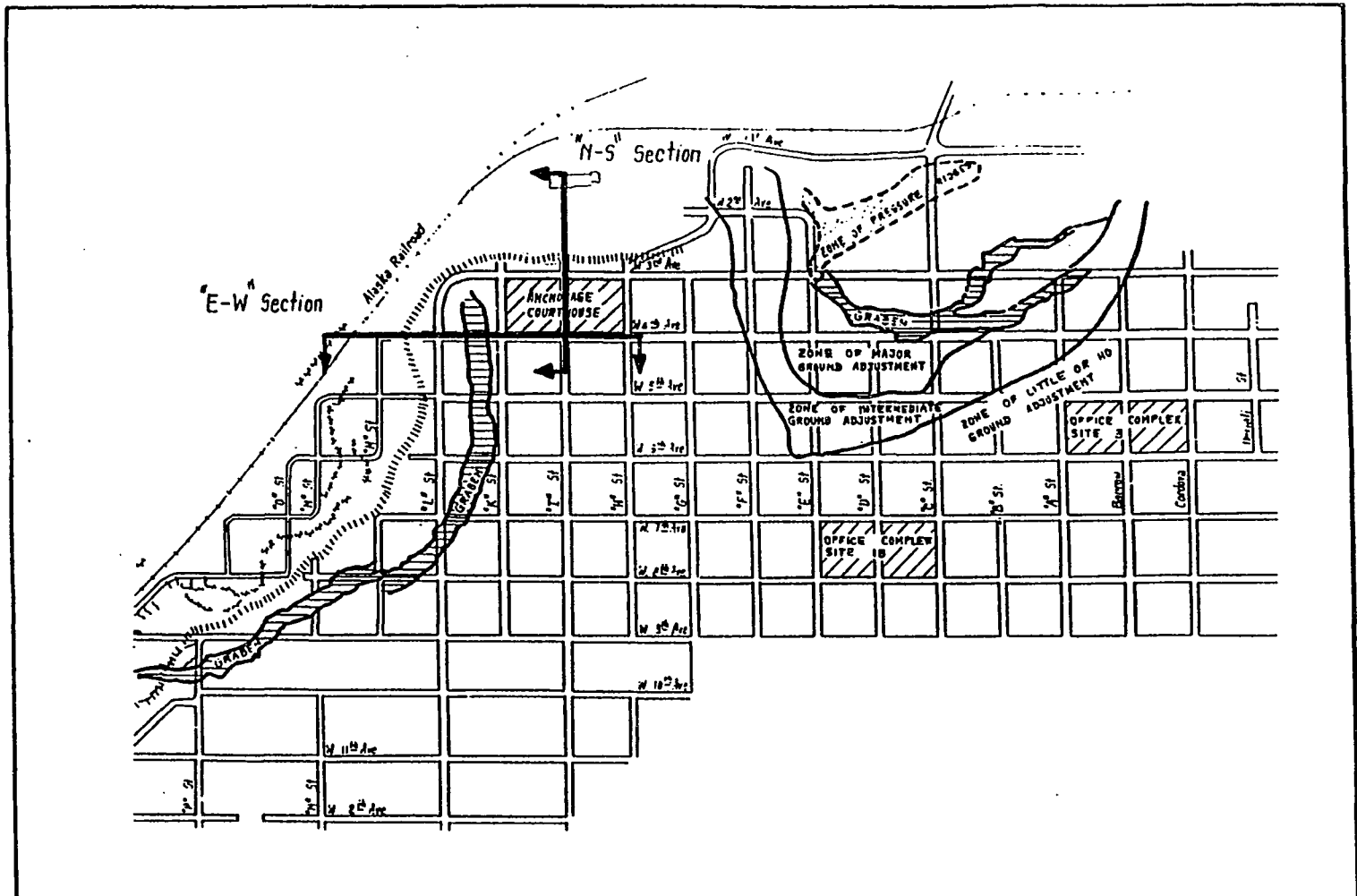
Courthouse Site - "E-W" Section -

(*) Note: Approximate location during 1964 "L" Street slide.

Project: ANCHORAGE COURTHOUSE
Project No. 86003L

Analysis Section Used in the E-W Seismic Stability
Evaluation of the Courthouse Site
WOODWARD-CLYDE CONSULTANTS

Figure
14



Project: ANCHORAGE COURTHOUSE ADDITION
 Project No. 86003L
 Courthouse Site and Northwestern Downtown Anchorage.
 WOODWARD-CLYDE CONSULTANTS
 Figure 15

DECISION PARTICIPANTS

Chapter 3 identified most of the key decision participants. It places those participants in the context of their relationship to the decision. This section once again uses the macro, meso, micro framework to identify key decision participants. There are too many individuals to specifically describe each of them. Consequently, this study selectively identifies the primary participants associated with the decision as well as the major interests associated with the participants. It does not attempt to rebuild the context which has been presented in the previous sections nor does it list by name all the persons interviewed. Rather, it identifies the general categories of participant. Chapter 5 uses this information to select representative interviews from each major participant group.

Macro: Wealthy Families, Business Interests, and Financial Institutions

Key decision participants at the macro level, detailed in the Land Ownership, Power, and the Momentum to Reconstruct section, include members of the wealthiest families in the community. They provided much of the investment money and development expertise. Financing for much of the reconstruction came from local banks, though some Seattle banks provided financing for investors. Large pieces of developable land existed in the L Street-

Third Avenue slide areas. Many sites were owned by established families in Anchorage. The bluff areas had been the site of many fine homes belonging to early Anchorage residents. These residents were part of the same social community of wealthy families outlined in Chapter 3.

The decision to reconstruct shortly after the 1964 earthquake was supported by individuals on the Downtown Merchants Association as well as the City's Reconstruction Commission, which included local bankers, the president of the chamber of commerce, state senators, executives from the oil industry, railroad and labor contractors, downtown business representatives, and representatives from state and local governments.

National Bank of Alaska founder Elmer Rasmuson was elected mayor shortly after the quake. His campaign focused on a commitment to rebuild and revitalize downtown after the earthquake. The community also elected a city council that was committed to the Rasmuson goals. The council was made up of local professionals and businessmen who worked closely with the mayor in deciding the direction for the reconstruction of Anchorage.

Federal Urban Renewal money channeled through the Alaska State Housing Authority in coordination with the city government provided funds for the purchase and clearing of land after the earthquake. Large blocks of land were amassed which created the setting for large-scale development. The

federal government began making disaster recovery loans very quickly after the earthquake. Money was available to quickly refinance the reconstruction. The 3-percent individual loan component of the federal disaster money came with almost no site limitation. The federal government financed an in-depth study that proposed several scenarios for relocating the downtown away from the bluff.

Within two years after the earthquake the vested power interest was in place along with a compatible political environment and the input of federal money. Larger areas of the developable land existed along the bluff. The community chose to overlook recommendations of federal, state, and local experts. Anchorage decided to focus its downtown reconstruction on land designated as high risk.

Meso: City Administrators

The meso participant level is made up of elected officials, including five mayors (and their staff), and 40 city council or borough assembly members, more than 20 planning commission members and a dozen individuals on the Geotechnical Advisory Commission. It also includes 10 major engineering, planning, and geology consultants who have studied the Anchorage area.

One of the most significant factors associated with this group is the continued turnover in the individual participants. City staffs have changed

significantly with each administration. In 1964 Mayor George Sharrock's planning staff focus was limited primarily to generating information to meet federal and state funding requirements. Mayor Elmer Rasmuson created a staff which was focused on the need to facilitate reconstruction. Mayor George Sullivan followed Rasmuson's approach and again hired staff that boosted development in Anchorage. By the mid-1970s state and federal funding requirements had changed. The municipal assembly was committed to increase planning efforts, and the city staff reflected those values. The turnover in staff from Sharrock to the end of the Sullivan administration was almost 100 percent.

Mayor Tony Knowles' administration benefited from vast amounts of state oil money distributed to local governments during the 1980s. Urban development increased, which resulted in city staff expansion. In 1986 a steep oil price drop led to a bust in the Anchorage economy. In the mid-1980s Tom Fink became mayor. He dismantled the planning department, replacing it with a staff which was focused on the promotion of private investment and development.

Turnover in local leadership has been high, partly due to a term limitation of eight years for municipal assembly members. This turnover is also reflected in the professional staff at the planning commission and

Geotechnical Advisory Commission. The study found very few members of the professional staff who have worked for the commission during the entire 12-year courthouse addition review period.

One consistent participant in the court addition decision process is the court administrator. Involved in the process from the beginning, he is the courthouse addition's most articulate advocate. He continues to be the spokesperson and key negotiator for the project review process. He lobbied the state government for the funds necessary to build the addition and continues to lobby as the price of the building increases over time. He is the primary interface between the court's goals and local and state officials. He has testified on behalf of the court throughout the decision process.

The most significant observation about this level of participants is the shift in focus with the continually changing administrative philosophies and the continual turnover in individuals who are providing input and making decisions concerning risk management. With several exceptions, the continuity of individuals involved in the process has been spotty. Only a few individuals participated in the decision process from beginning to end. This lack of continuity has made it difficult to transfer technical information from one decision event to another.

Micro: Courthouse Users

The micro level of participant study focuses primarily on the individual risk exposure perception and liability associated with courthouse users in regard to earthquake hazards.

Categories of Participants. Micro level decision participants include four categories of building users:

1. The court judicial, administrative, professional, and nonprofessional employees
2. The legal support communities, including individuals such as lawyers, police officers, private transcribers, and couriers
3. The general public who uses the courthouse for specific public services such as recording deeds, changing names, or getting marriage licenses

Individual Exposure to Risk. The participants in this study have varied exposure to risk. The citizen who visits the court only to obtain a specific service has a significantly lower exposure to risk than does the judge or secretary who works all day in the court building. Citizen and employee exposure is voluntary in contrast to the prisoner who is incarcerated and has no power to determine his level of risk exposure. The liability of the state and city

associated with potential loss of life or property may vary depending on whether or not the risk exposure is voluntary or not.

The interview process will draw from each of the decision groups listed above.

CHAPTER 5

INTERVIEW DEVELOPMENT

This chapter focuses on development of the interview process. The first section identifies key individuals and how they relate to the process. The second section presents the intent of the interviews and identifies the general areas of examination. The next section outlines the basic question framework designed to address the research intent. Finally, this chapter presents areas of investigation that are shared at the macro, meso, micro levels as well as the areas of investigation which are unique to each level.

IDENTIFICATION OF INTERVIEW PARTICIPANTS

Research interviews are divided into the macro, meso, micro framework. Individuals were selected based on their relationship to key issues as well as knowledge about the informational gap in the review of the written record. One interview participant often opened a door to another key participant. In some cases an individual is a key player at more than one level. For example, three participants served on the city council and also served in other political or appointed offices at different times in the decision process. Interviews with

those individuals have been presented in the level in which they have had the most influence on the courthouse decision process.

Macro: Participants in Development Decisions

- Governor and land developer
- Bank president/owner
- Planning commissioner/real estate developer
- City council member
- Anchorage mayor
- State senator/city council member
- Owner/financier/developer

Meso: Participants in Design, Evaluation, and Recommendations

- Insurance executives (2)
- City planner
- Court administrative representative for the courthouse addition
- Geologist
- Planning and Zoning Commission member
- Geotechnical Advisory Commission member
- Project architect
- Court project review engineer

- Courthouse project architect
- Geotechnical engineers (2), both members of the Geotechnical Commission

Micro: Courthouse Users

- Recent jury member
- Judge
- Two citizens (the state senator, also a lawyer, and the court representative are regular court users)

Informal Interviews

Informal interviews occurred in the research process.

- Comments from two current legislators commented on their lack of knowledge of seismic issues concerning the court house.
- Courthouse employee comments regarding safety of existing court facility.
- An engineer's post interview comments in a phone conversation.

REVIEW OF RESEARCH INTENT

Question development is grounded in the original intent of this research which asks why a community located in a seismically active area would choose to reconstruct high-use, high-occupancy buildings on land which was designated after the 1964 earthquake as high risk for potential ground failure. The interview questions focus on the exploration of key areas. These areas are defined by the research hypotheses, which briefly reviewed are as follows:

1. Individuals process risk-related information in a manner that allows for interpretation and acknowledgment of information so that it is compatible with personal agendas and emotional and intellectual constructs.
2. Private and public decision systems are designed to allow for the recognition, interpretation, and inclusion of information in ways so that information is compatible with personal and social agendas and constructs.
3. Individuals and society manifest cultural dissociate behavior to the extent that we are capable of blocking out or repressing true risk-related information which is incompatible with our cultural constructs and

agendas, even when that information is essential to our safety and presented in our public view.

FOCUS AREAS AND FRAMEWORK OF QUESTIONS

The intent of the study provides the context for question development. The interview questions fall into three broad focus areas which are designed to explore the research question and hypotheses. These broad areas serve as organizational tools. The first area addresses the review of the decision process at both an individual and community level. The second area examines the individual's perceived and actual role in the decision process. The last area considers the individual's perception of risk.

Interview questions were phrased specifically for the individual being interviewed. Often, after the research was described, the participant spoke to the questions without specifically being asked. The job of the interviewer was to bring the participant back to the area to be addressed. The open-ended quality of the interview process allowed more information than is tied to specific outlined questions. Participants for the most part were expansive and eager to share their views of the decision process. Interviews took an average of one and one-half hours each.

The following questions provided the interview framework for the exploration of the focus areas.

Focus Area 1: Review of the decision process system at individual and community levels

- What happened in terms of the bluff reconstruction and the courthouse addition decision and why?
- What are the variables upon which the participant bases decisions regarding investment in construction on the bluff/slide area and/or the courthouse addition?
- What information is important to the process?
- What individuals are important to the process?
- What might have changed the participant's decision?
- Did the review process work and why?
- What would improve the process?
- What are the motivating factors associated with the decision?
- Why didn't we move the community's rebuilding efforts back 3 blocks from the slide-potential bluff areas to safer land?
- What information was acknowledged in the decision process?
- What information was not acknowledged?
- What were the reasons for acknowledgment or lack of acknowledgment?

Focus Area 2: Review of the individual's perceived and actual role in the decision process.

- What knowledge does the participant have regarding the actual courthouse addition decision and general reconstruction momentum in the bluff area?
- How important is the participant's role in the decision process?
- Who is responsible for the decisions if there is ground failure under the courthouse, or under another building in the area?
- When did the participant become aware of the seismic issues?
- How does the participant evaluate the seismic issue problems in relation to the participant's role in the process?

Focus Area 3: Individual perceptions of risk.

- How likely is it for Anchorage to experience another moderate earthquake? Another major earthquake?
- How many faults could affect Anchorage in terms of seismic activity?
- Are there buildings the participant will not go into as a result of earthquake potential?
- Does the participant change any daily pattern as a result of being concerned about earthquake risk?
- How often does the participant think about earthquakes?

- How confident is the participant in the seismic safety review process associated with the courthouse?
- Has the participant experienced a major earthquake?
- Is the courthouse going to be safe?
- Is it possible to construct a building which can withstand ground failure?
- How does the participant explain the vastly different opinions regarding seismic safety at the courthouse site?

MACRO, MESO, MICRO TOPIC AREAS

Each interview was tailored to the participant. The interviews were designed to allow for the exploration of any information which might be relevant to the decision process. All participants were asked the individual perception of risk questions and the individual perceived and actual roles in the decision process questions (outlined in Focus Areas 2 and 3 in this chapter).

Palm (1990) reminds us that the examination of hazard perception at each level is essential qualitative research in natural hazard. This research seeks to understand motivation, resources, sense of control, and the general level of salience that each individual has in regard to earthquake risk. Each interview level has a role in defining its level of examination as well as linkages to other levels. These linkages can be understood as mutual sets of constraints

and enablements which link micro-level individual responses to the macro level of society, culture, and political economy. It is these linkages which provide the construct for individual perception and behavior in regard to risk. The combined outcome of these linkages results in the community's response to risk. By carefully following the linkages we can understand the motivation and causality of the decision process. This understanding can lead to the identification of appropriate areas for intervention.

Although overlap from level to level was inevitable, each level had a predominant focus. At the macro level issues of power, politics, and money dominated the answers, which led to more questions regarding these issues. At a meso level technical information was the dominant topic. At the micro level individuals expressed a lack of personal power as well as a faith in the review system.

CHAPTER 6

INTERVIEW FINDINGS

One of the most difficult tasks of this research has been deciding how to present the information generated in the interviews. Most participants enthusiastically presented what they understood to be true. Early in the process it was apparent that drastically different perceptions of truth exist regarding development in the Anchorage slide areas and the courthouse addition decision.

If this study does nothing else, it clearly reveals different perceptions of truth regarding the development and decision process. Through their varied articulations we can evaluate individual and cultural perceptions, and it is only when we understand these varied perceptions that we can begin to work together to resolve shared problems. The interview excerpts are long, but they provide valuable insight into how the participant thinks. Each perspective of truth has a construct which is tied to individual and group values. By clearly reporting the interview we begin to understand the constructs.

It is possible to reduce the participant's views to cynical cartoons of greedy developers, opportunistic and overcautious professionals, ambitious

politicians, and naive citizens. The moment that is done, the research goal is lost. Yet that does not mean that all motivations are honorably benign. It means that there are complex rationales for decision making that must be understood and respected if we are to solve the challenges of risk mitigation and hazard reduction.

Whenever possible, the interview answers are not paraphrased and selected portions of the full text are presented. In the interview process I was impressed with the conviction and commitment each person had to his or her defined community mission. I have selected excerpts which I feel best explain the participants' viewpoints. Also, wherever possible, names of specific individuals or buildings have been dropped. Governor Walter Hickel's name and the Hotel Captain Cook are included because those identities are so apparent and central to the process and he currently is an elected official whose views and actions are well known.

In the process of the interviews, participants provided additional information. Almost every interview included an unsolicited discussion about the reconstruction of Turnagain, the residential area that suffered major damage during the 1964 earthquake. I have included some of those references because they clearly address the community and individual rationale for reconstructing on high-risk land. The macro level primarily focuses on the

general reconstruction momentum. The meso level examines the courthouse addition decision as well as some general reconstruction perspectives. The micro level presents the user perspective.

Quotes in the interview text which particularly illustrate the varied intellectual constructs have been underlined. The selection of these excerpts illustrates the specific construct associated with the participants. To gain a more complete understanding and insight into the constructs it is important to review the entire interview.

Clearly, no one is without some bias in terms of how they process information concerning risk. It is appropriate for me to declare what I know of my own bias. I am the daughter of a prominent Alaska geologist who has spoken out against development of high-risk bluff areas in Anchorage for 30 years. I grew up in Anchorage and experienced the 1964 earthquake. I know several of the individuals at each level that I interviewed. I plan to continue to live in Anchorage, and there is a good chance I will professionally encounter many of the individuals I interviewed. I am different from my mother, but I have great respect for her and her immense knowledge about seismic issues. I am a planner who understands a community's need for sustained economic balance, and at the same time I recognize the essential community component of social and environmental health.

INTERVIEW FOCUS AREAS AND CONTENT

Each level of analysis identified common factors which are presented to varied degrees in the following interviews. These factors contribute to the understanding of the intellectual construct which dominates each level. At each level the factors can be broken down into three broad areas of focus.

Macro Construct Elements

The macro construct is defined by the following common factors which are expressed in the interviews.

1. Personal mission and money, power, and politics as it impacts the decision process.
 - a. the protection of existing personal and community investment.
 - b. a strong commitment to restore economic health to Anchorage.
 - c. confidence in the free market system.
 - d. a personal calling to charge full speed ahead in the name of progress.
 - e. recognition of Walter Hickel's role in leading the reconstruction process.
 - f. direct influence in the outcome of important community decisions.

- g. confidence that an economically based decision would insure seismic safety.
2. Mistrust of experts who do not support the choice to reconstruct on high-risk land and a pseudo-scientific explanation of earthquake risk.
- a. the lack of respect for professional geologists and engineers who recommend land development constraint.
 - b. the perceptions that those persons who do not agree with them are in some way flawed.
 - c. individually unique and sometimes pseudo-scientifically based explanations of earthquake safety.
 - d. the assumptions that outsiders or experts should not determine the community's fate.
 - e. great confidence in site-specific engineering.
3. Transference of decision responsibility and risk denial and dissociation.
- a. the transference of participant responsibility for the actual decision to construct on the site to someone else.
 - b. denial or dissociation regarding earthquake potential in Anchorage.
 - c. a general disregard for earthquake risk in daily life.

Meso Construct Elements

The meso construct is defined to varied degrees by the following common factors.

1. Money, power, politics and its impact on the decision process.
 - a. a cynical view of political behavior, which sees politics as having no commitment to public safety and being influenced by the interest of powerful and wealthy persons.
 - b. the general view that powerful and wealthy people will do whatever they choose to do regardless of the system.
 - c. a general agreement that there is an Alaskan frontier mentality which is based in opportunism and independent property rights that supersedes technical information or community welfare.
 - d. varied views on whether Shah's role was to be an independent expert who helped the court find the right answer or a hired opinion to bolster the decision which was already made.
 - e. a willingness to redefine the courthouse seismic problem in order to meet the demands for construction.
 - f. a disillusionment in the formal review system to prevent construction on seismically dangerous sites.

- g. varied views as to whether or not any information could change the court decision to construct on the site or the city decision to grant approval.
 - h. recognition that Walter Hickel's power and influence focused on the decision process to insure that the court would continue to stay on the bluff site.
 - i. recognition that the primary way to prevent development on the land is for the public to acquire it and that the cost to do it today would be prohibitive.
2. Decision process relationship to professionalism and varied perceptions of court needs, site safety, and liability.
- a. professional politeness between engineers as well as recognition that some engineers will tell clients what it is they want to hear.
 - b. a commitment on the part of professional architects, engineers, and geologists to insure public safety through careful evaluation and design solutions.
 - c. varied views of the safety of the courthouse site and of the competence of Shah's evaluation of the site.
 - d. recognition that the formal review process does improve seismic safety.

- e. an agreement that this review process resulted in the seismically safest possible design for the court on the bluff site.
 - f. the assumption that, for functional reasons, the court needed to maintain the entire system together in one location.
 - g. the assumption that moving the new building site away from the bluff implied the larger expense of reconstructing the entire system somewhere else.
 - h. the lack of recognition of community liability costs associated with a potential earthquake disaster.
3. Transference of decision responsibility, and professional acknowledgment and personal denial of earthquake risk.
- a. confidence that important aspects of risk-related issues are addressed adequately by someone else in the decision process.
 - b. identification of other individuals who are responsible.
 - c. professional recognition of earthquake potential in the Anchorage area.
 - d. personal dissociation on a daily basis about earthquake potential.

Micro Construct Elements

The micro construct is defined to varied degrees by the following common factors which are once again divided into three major focus areas.

1. Powerlessness and faith in the system.
 - a. faith that the system will insure seismic safety.
 - b. expectations that the new building will be safer than the old buildings.
 - c. a lack of participation in and knowledge about the courthouse decision review process.
 - d. belief that individuals are powerless in influencing the decision process.
2. Acknowledgment and acceptance of community earthquake risk.
 - a. general agreement that Anchorage will have another significant earthquake within 10 to 100 years.
 - b. assumption that the location of the city makes it impossible to avoid earthquake risk.
 - c. concern about cracks in the existing court building.
 - d. belief that in order to meet community and economic responsibility risk must be ignored.
3. Transference of responsibility to entities beyond individual control, and denial or dissociation from earthquake risk in daily life.
 - a. fact that individuals deny and dissociate from thinking about earthquakes in their daily lives.

- b. the perception that seismic safety is the responsibility of the municipality.
- c. fact that decisions are sometimes emotionally driven and have no regard to rationally based information.
- d. the perception that seismic issues are beyond human control and are determined by nature or acts of God.

MACRO INTERVIEWS: THE POWER OF VESTED INTERESTS

Governor/Land Developer

Q: How would you explain the decision to construct high-rise development on land designated as high risk?

A: In 1954, I bought the first piece of land. Nobody was down there [Third and Fourth Avenues and the bluff area]. ... So, I saw that whole Third Avenue site and down, looking that end of town and I had a local engineering firm do a soil engineering study. ... But I read the report, kept it to myself. It became very clear that where they drilled on Third Avenue, that had slid before man sometime. And then, so they did an analysis of where gravel was and where it wasn't. As you moved up to Fourth, Fifth, and Sixth Avenues, especially this side of L Street, that gravel in there got to be quite deep -- 20 feet or more.

When I had that report, that the earthquake came, and I was in Tokyo at the time. I told my friend, ... "I'm going back to rebuild the town." ...

Anyhow, they were talking about moving the town, doing a lot of things. And I says, oh no, that doesn't make any sense. Earthquakes stabilize. And this is where the arguments came. I use a common sense approach that earthquakes stabilize land and they don't make it weaker. If earthquakes made the land weaker, the Earth would've fallen apart millions of years ago. All earthquakes do is shake it down level. I explained my mind and how I talked to engineers about it and they finally came around. If you pile a saucer cup, pile it full of sugar 'till it's clear full to a peak at top, you shake it a little bit and it'll slide down. Pretty soon, you'll get to a point where you shake it and it won't go nowhere. ... It'll stay there. And that's somewhat what happens in earthquakes unless you're directly over a fault.

... I made the decision, not out of a glaring ignorance, but of lots of knowledge. And so, to prove a point a bit, the courthouse across the street from the Captain Cook was in that land ... that I owned at one time and drilled that area. That courthouse didn't have a crack in it.

Q: In response to a question about responsibility and decision making, Hickel responded:

A: You have to have knowledge. You have to have competent people making the design and then go forward. For example, where the new courthouse is today, there just isn't any problem there. That land did not move and the courthouse that was there did not move in probably one of the greatest earthquakes in North American history.

Q: How do you perceive earthquake risk personally? How likely is it to have a moderate earthquake in your lifetime?

A: I think it's possible.

Q: How about a major earthquake?

A: All right, we had probably the greatest earthquake in North America happened in 1964. [The damage] wasn't really [that bad] outside of a couple [blocks] in Turnagain. The Fourth Avenue building, the McKay Building and the I Street building were not designed for that heavy an earthquake, but they withstood it. The Westward Hotel, right on that edge [and survived it].

Q: Are earthquakes an issue in your daily life?

A: No. [Not] Anymore than death is. That doesn't mean it's not gonna happen. That doesn't mean there's not a few people not gonna be killed.

Q: What is important to understand about your decision to build the hotel?

A: Basically, I knew what I was doing. I made two decisions. One, the fact that I knew what I was doing, I thought. The other one was, Anchorage needed that confidence.

Q: What needs to be understood about this process?

A: Basically, first you have to have knowledge and interpret that knowledge and ask other people about that. So I had the best knowledge that was available. The engineering firm was probably one of the best in the world. And I didn't even have to look at the report, I know what it said. The other one was the instinct. I operate, you heard about my little guy [in my pocket who gives me advice]. So, the minute I heard this earthquake ... [I said], I don't know what happened, but I'm going back and rebuild that town. And there was no doubt about it. It was just as clear as a bell. I wasn't sure what was happening, but I did see it. Besides the knowledge we had, I had the confidence of my internal decision. And I think you can't get away from that. And what really happened, when we had all those meetings and the geologist was trying to stop me and all that. They collectively hang together because they're professionals. This is vitally important. ... They hang together. Someone has to come out and say, Well, look, you know, these are the other facts. And I used to tell 'em that, but I wasn't a geologist.

Q: Why do they hang together?

A: 'Cause they don't have individual competence. They all were taught in a certain school, they have certain credentials, and they reach the same place, so they all protect each other. It's a little bit like doctors. One will make a mistake, and the other one knows it's a mistake, and he could tell him how, but they won't say anything. And so you'll find a Wally Hickel, or it's like Lincoln said at his cabinet meeting, all of you vote no, but the answer is yes. Because they hang together for fear they're lookin' foolish. I don't mind looking foolish, because I don't look foolish when you go down the road. You have to look into the future far enough to see what's it gonna look like 25 years from now. And I'd hate to have been the one that says let's move Anchorage to the base of the mountain. And that's what they were talking about.

Bank President/Owner

A: After the earthquake, we all saw the devastation and saw the meander lines as they went along the bluff. Interesting, where some parts fell and some parts shifted down. And, immediately after that, we had asked the federal government to come in to help us out, you know, with SBA help, and they certainly did a heck of a job and started making SBA loans right and left, without worrying about where the building was located. In conjunction with that, the federal government came in and decided this would be a real good case study to study; i.e., the Corps of Engineers.

... Then the recommendation was by some of the engineers to relocate Anchorage in some respects even further back than just one block; relocate Anchorage elsewhere. And a lot of people ... were reluctant to do that for a variety of reasons, and one is that they felt that you've got to take some risks in this life. Number two, we have our intrinsic value is here. Our streets are laid out here. You know, we've had this terrible thing happen, but it's only happened once in our lifetime and in the foreseeable and in the last two or three hundred years or whatever, and we don't feel that there could be another earthquake of that magnitude. And, generally speaking, when you have an earthquake of that magnitude, it moves, the place moves and then they rest for a long time. Smaller quake, not of the magnitude that will require a fluidity of the soil. So, the business leaders said nuts to those reports. We're gonna go ahead and build back where we lost. In effect, where we had our establishments. . . . Then my father (who was also a bank president) was elected [to be mayor] and he got a good council and a lot of business people on that council. My father ran because he didn't like all the things that were going on and the people running scared and having outside consultants telling us what we should do and what we shouldn't do. He wanted to be able to guide the city in a better direction so that we're not having to jump from here and jump to here and jump to there.

... And so [the new administration was] able to lean back and say look-- we think that Anchorage doesn't need to be relocated. We will do some engineering, ... but, we're gonna relocate where we're at right now, because it's just too expensive to go ahead and relocate Penney's and relocate the National Bank of Alaska, and whatever buildings along the way. And, we did. In doing so, you took a risk evaluation. And the risk evaluation was that we don't have earthquake insurance, but we don't think there's gonna be another type of quake in that magnitude. And it's proven out. Here it's thirty years later, a lot of buildings have been built [along the bluff].

... look, people reward the risk-takers in this world. And if you don't take risks, you don't really get ahead. And I'm in the business of assessing risks. People entrenched in the business of assessing risk. People who are in business, be it the hotel business or small business, or whatever, are in the habit of taking risk when they go out and put their part of the family savings and say I want to open a shop. They're taking a risk.

... Basically, everybody makes that assessment when they're in business and they can look at the geology reports and a lot of these, what-if scenarios. And geology is a tool to be utilized like any other tool, to make an assessment of risk. And they had other assessments to look at too and they felt that this

particular one didn't command as much as this other. So they went ahead and started building. And I'm in the same thing at Turnagain.

Q: You're building your own house? [The bank president is planning to construct a home in the high-risk Turnagain area.]

A: Yes, but, we did a drilling and went down 55 feet and it was still blue clay. On the other hand, there's 14 or 15 feet of sand and gravel, or sand.

Q: Above it?

A: Yes. Did a compaction test and I talked to one of the engineers. He said, oh you better build a big big huge foundation. I talked to a builder who's built all over town and he says, yeah, build a good foundation. But don't listen, they're going to cover their own rear. So I said to the engineer, what happens if I say basically sign a wavier that says it's all right to build, don't worry about it. He says well then you might not have to build it. Everybody's trying to cover themselves. So, I'm assessing my own risk where I'm going. And I think that's what happened back there in 1964, 65, 66, 67 and really that's about the extent.

Q: Why do you believe we didn't move back the two blocks? (Example: Tower X on top of a fault.)

A: But Mrs. X didn't own the land two blocks away. She owned the land there and we were willing to finance it and we built the Tower X there.

Q: You got insurance for it. Yet you made that decision to build, even thinking you weren't going to get insurance?

A: Yes, we did. I don't think another earthquake of that magnitude will be in our lifetime, and I get sick and tired of listening to doomsday sayers. So, we said the heck with it, we'll just go out and take a leading position and say we're gonna do it. Thirty years later, now we've got the courthouse land there. So, sure, that's the simple answer to it. The land is there. If Mrs. X had the land on I street, or H Street, she would've built there. The Captain Cook could not have been over in Spenard [a small Anchorage commercial/residential neighborhood about 5 miles from downtown]. You just have to build down there. That's where it was.

Q: Do you think about earthquakes?

A: I don't think about it. It doesn't enter my mind. I don't alter my life. I don't alter it because there might be a hurricane come up here or a big wind. If I'm gonna fly, I'll watch the weather reports there, but I could do something about that. But, I can't do something about my death. Or I can't do something if I'm flying in an airplane. I'm not going to worry about a major earthquake or the fact that I will build a home that's not going to be made out of mud. I'm gonna build it on a solid foundation and let the chips fall where they lay. But, those are proper pre-thinking on it, preparation. But, the

majority of people don't think that way. I know that it doesn't enter their mind; they have other things they worry about. You know, in the Bible it says we have enough worries today without having to worry about tomorrow. We might as well get on with it.

Q: If you were to make this system better, how would you make it better?

A: I would rely less on "experts" and more on my own gut feelings. I think we rely too much on specialists and we get mesmerized ... by some of the what-if scenarios and we tend to get the populous too concerned and too scared.

Planning Commissioner /Real Estate Developer

The interview begins with the developer reflecting on events associated with the 1964 earthquake.

A: This office was here at that time. And it became headquarters [for the evaluation of the Turnagain slide area. It was located on the edge of the slide.]. It was sort of funny to watch people come in the door and they would come in looking fairly serious, and say I'm so and so and I'm a structural engineer. "Oh, Joe, they'd say; they'd see somebody else on the other side of the office, I haven't seen you since Chile." People kept coming in. This was the most exciting thing. They tried to suppress the excitement, but their excitement was gleaming in their eyes. This was the proof of everything that

they'd ever done, and they just wanted to see structural damage and things like that.

For six months, I was not only personally involved ... I heard everybody's version of things. Saw all the test holes dug and all that sort of thing. And then I had to make a personal decision. Myself, what do I do now. ... Where am I gonna live. And I thought about living in the mountains, I thought about living on the east side of town, and then I thought about, gee, where I'd really like to look, live is looking out over that ocean where I've always looked. Then, I'd say to myself, what are the odds?

... I think you have to put all the risks of life together and I'll have to say, I've been here 53 years now and we had, I think, what, seven deaths at this one time. What are the odds of driving a car, how many deaths are there a year in Anchorage? What are the odds of violence and break-ins and attacks on people? And is this earthquake-prone situation only one of many risks that people take by just getting up and breathing?

Q: What is important to understand about the decisions that took place for the reconstruction after the earthquake?

A: The one person who kept the entire town together was Wally Hickel. His decision to go out and lay foundation in the fault zone, right there, was a dramatic thing to do. There was a serious question whether this town would

economically ever live again. The town was devastated and there were proposals to move the town somewhere else. ... Planners could have said, there will be no more buildings here, but we will allow building over at some other area which is geologically correct. ... I mean, that may have been a good geological or a good planning conclusion, but it was not an economic sense. There were too many people with too many commitments that would lose everything if it were done.

Q: How do you explain that today people are building on the high-risk land in Turnagain when we even had a land program to give residents other lots so that no one would build on the high-risk land?

A: Everybody has an agenda and in time of a crisis, people leap in with their agenda to keep their spaces next to them open, to retain things for the Municipality in this case, etc. So people do have an agenda on things. I don't know if I can give you any answers to these questions. We will all feel very guilty if something does give. Now I, how do I phrase this, I distrust the Geotechnical Committee. I think it had a bias. I know some of the people on there and not all of them have training when it comes to soils engineering. And they assumed upon themselves something that their training was not there.

Q: What would be the motive for their bias?

A: There are people who are for development and there are people who are against development. There is that mindset.

Q: How did you evaluate the geotechnical information concerning the courthouse?

A: Now, I don't know that I am capable of making a geotechnical decision. I do distrust geologists.

Q: Why?

A: Well, there are several disciplines here. There's soils engineering and there's geology and there were a lot of geologists who jumped into this saying, "I'm an expert." And I learned to distrust them because I don't think geologists are experts. I think we're dealing with a micro issue of geology which is really soils engineering. I would listen more to a soils engineer than I would to a geologist.

Q: How much are earthquakes an issue in your life?

A: It's not there. I'm more worried about the idiot ahead of me who's gonna slam on the brakes than I am, and my risk is much, much stronger that I'm gonna get killed in traffic.

Q: Do you alter plans in any way regarding seismic issues?

A: No. You make the big decision, I'm gonna live on the rim of fire. Then, it's gone. I mean, you don't decide where I'm gonna go or where I'm not gonna go.

Q: If you were going to change the present system as far as the evaluation process, what would you do?

A: I doubt if the Geotechnical Committee's honesty and pure hands, I'm sure that they didn't. They had an ax to grind all the way along.

Q: Suppose there is an earthquake, the courthouse collapses and people die in that building. How do you distribute responsibility?

A: Obviously, the Planning Commission and Assembly have a strong responsibility. But, you've got a new courthouse, you've got an old courthouse. You've got attorneys functioning in the D&D building. You're not totally responsible for what happened to Anchorage in a new courthouse because if the new one goes down, probably the old one will go down too. ...

Q: What other insight should I know about this study?

A: I'm seeing, over the last three or four, two decades, I think, an increasing demand upon society to identify risks that were present 50 or 100 many years ago, but we are identifying more and more risks and we are taking more efforts to eliminate risks. And until it becomes a finite point where nothing happens. ...

Also, I don't know, but I do think that the geological studies changed as time was worn on here. We are seeing much more optimistic statements about structural figure of ground than we did. ...

Finally, there are some of us who are viscerally going to charge into the charge of the light brigade. This is what life is about is charging forward.

Other people are more reflective.

At the end of the interview the participant gave me a draft of a recent geotechnical study that reevaluates portions of the Turnagain area which failed during the 1964 earthquake. It concludes that the slide area is flatter and more stable, that the strength of the underlying clay has increased, resulting in improved stability. The report is supportive of the development of single-family dwellings in the area.

City Council Person

A: ... The first is, how do things really work? I think the investment, regardless of the geophysical condition of the land, what was at risk here was the economic viability of downtown. ... National Bank of Alaska moved out of downtown [to Midtown, a commercial/business district 3 miles from downtown]. That is a crushing blow to downtown. And, the beginning of the development of midtown. Mr. D. built the D&D Building across from the existing courthouse and wanted it full of lawyers and people who were gonna be connected with the court. ... In the question of the location of the parking garage, there were several variables that came into play. One was Sheffield's

Hotel. And the gist of that is that Bill Sheffield was going to build the Sheffield Hotel because, I think Bill was Governor by then, ... They were going to build a big new tower and they needed a garage downtown. Part of the rationale for why there had to be a garage was that the courthouse was gonna expand and they needed all this more space for the courthouse.

The fundamental question for investors, for moneyed people, was downtown versus midtown. And the concern about the courthouse was, if you move the courthouse out of downtown, then you just did the death knell on downtown. ... that there needed to be daytime activity downtown. If the business sector wasn't gonna be downtown, then what is this gonna be, restaurants and bars. There was a real strong concern about the courthouse talking about moving someplace else. And I don't know that they ever intended to move it anyplace else.

The other thing that you have to remember is there was just a shitload of money from Juneau. It was raining money in '82, '83, '84, it was phenomenal. I mean there was a year when we got money on a per capita basis of a couple of million bucks a pop to buy anything you wanted to buy. The ambience of Anchorage was hustling. [There were many, many] construction permits. [The town] was on fire. ... What I think is important for you is to put the context of the times.

In '86 is when the price of oil collapsed from almost \$40 a barrel to \$9 in one day. And it was over. And then we flipped into our bust cycle. The pressure on any decisionmaker in this town to say no to anything, I mean to say no was to be an obstruction. To say no was to be a left-wing liberal do-nothing person.

Q: Someone I interviewed said that from the beginning this project was going to happen no matter what. What do you think about that statement?

A: ... Once the state had purchased the land, I think it would have taken serious hell and high water to prevent it from occurring. And, in watching the subsequent tug-of-war between [a powerful citizen] and a court representative over pulling out of his building, and [the citizen] basically stymied the court representative for two years. I mean, he single-handedly stopped the Legislature from giving him any money until he came to his senses. This is high stakes poker. So, like who are you gonna put your money on? The court's representative has been a political for 20 years, or [the powerful citizen] who's paid for most of those campaigns for 20 years? The [powerful citizen] won, and they finally came to some kind of an accommodation. So, they'll keep renting his building. But I would say, anybody who was trying to stop it, was whistling in the wind. But anybody who was trying to make it safer, make

it better, in fact, probably significantly affected and influenced the design of the building and the requirements of how it was going to be built. ...

Q: How do you explain that the record shows there were important geotechnical issues that were not weighted as heavily as saving the apple tree on 3rd Avenue? Or saving the old gas station?

A: In the public process, people talk about stuff they know about. People don't talk about stuff they don't know about. So, if you go to a council meeting and on the consent agenda is \$10 million worth of stuff, and half of it is buying computers and transoms and dodas and dedas, nobody asks any questions about that. But then there's a \$30,000 purchase of paper and that's what people want to talk about. Because they know what paper is. They know how you're supposed to buy it or something. ... In the meantime a multi gazillion dollar item just goes sailing on by because people don't get it.

... Some times vast amounts of time are devoted to bullshit because we're only human beings. What people talk about in a public arena are things that they're comfortable talking about. So, people could talk about saving trees until hell freezes over or they could talk about whether or not you like how a gas station looks rather than the engineering requirements to withstand a 5., 6., 8. Richter scale earthquake cause that's kinda confusing, and also scary. To

me, the most horrible question, you've got Plaza Y, kitty-corner [just hanging] on the bluff and that building there.

Q: How often do you think about earthquakes?

A: ... I am not conscious of earthquakes. ... I am not earthquake-conscious very often until we have an earthquake.

Q: If there was a major earthquake and if the bluff gave way and if the new courthouse had persons left in it and if it collapsed, how would you assess the responsibility?

A: What would happen and what should happen are probably two different things.

Q: How would it be spread out over commissions, community, etc.?

A: First of all, I don't think there's any one person or any one commission or any one set of decisionmakers who owns the responsibility for the thousand people who are going to be smushed when the earthquake happens and the courthouse collapses on top of their heads. People will say how could this have happened, but the fact of the matter is that at that time somebody will say I told them not to put it there. They'll go back and check the engineering on the building and did they really earthquake-proof it as much as they could have. ... They'll be some people probably trying to look to the state as the deep pocket

that they can come back on. It depends on who it is and how many lawyers they have at their disposal to be able to pursue that.

Q: Why do you think that site was selected instead of land 2 blocks away not on the bluff?

A: My guess is the reason that the land was purchased is something as simple as it was next door. ... But, the procedure by which, for court representative to be able to buy the land required the same court justice to approve it and I don't think there was three seconds worth of thought connected to seismic issues. The reason the Anchorage Project '80s facilities were sited where they were by looking at a map ... blue means that the city already owns the land. That was the criteria for site selection. ... So, my suspicion is that no matter what happens, the person who said that decision was already made was probably right. That once the land was purchased, the question became could you improve on safety. Who's culpable? I don't know. ...

What I would say is that, well clearly the Assembly holds the responsibility because Geotechnical Committee and the Planning and Zoning Commission are both advisory to the assembly. ... I think every person takes information, makes a judgment, and then makes the best call they can. And sometimes the community says one is wrong. I don't think anybody is ever

operating out of malice, I think they're operating out of the best information they can in making that decision.

Q: What else should I know in order to understand this situation? What insight can you share that will better explain what has happened here?

A: Do I want to think I live in a dangerous place? No. If you go to Earthquake Park today, it's all green and pretty. Maybe the earthquake didn't happen. Maybe it won't happen. It's kind of benign. And, after all, we haven't had one since '64, so maybe it won't. I'll bet the number of people who were here during the '64 earthquake is something like less than 5% of the population. So, does the community have a consciousness of earthquake risk?
No.

I do think that the premise that we're operating on in our Western American system right now is if the government says no you cannot use your land then the government has to pay cash for that privilege. So, the government which has finite resources is sitting there saying is my dollar better invested in telling you no ... or buying a policeman. I gotta buy the cop because the people who I serve are more afraid of bad guys than they are of earthquakes. Bad guys are more real, they're here. The earthquake is an if.

I think, particularly in Western states and particularly in Alaska which is sort of off the charts on my God-given right to do my stuff with my stuff, I

think the philosophy of the government is I don't want to spend money to say no, I want to spend money to do stuff. Say you are looking on the other side of the ledger of these disaster expenses, and in addition to rebuilding everything, there is a liability associated with it and a lawsuit, then the gazillions of dollars connected with earthquake reconstruction and your choice is \$50,000 today versus \$4 million, billion to rebuild.

Mayor

This participant served as Mayor during the courthouse review process. He was in office from 1981 to 1987. He is currently running for state governor.

Q: What do you remember about the courthouse addition review process.

A: in the comprehensive development plan for Anchorage we had the major public facilities in the downtown core area. We felt that was good urban planning, too. It was good economic urban planning because even though this is a public facility, the associated private development around it would increase your tax base. It would allow your commercial expansion without having a sprawling urban center and would increase the opportunities for other commercial development. The retail development would potentially help increase the residential densities around the core area. All of which provide for better transportation, [and be] more efficient. ...

Once we were approached by the court system on the major expansion that they wanted to do, we felt it was important to keep them in the downtown area. It also fit very nicely into the federal executive order which was that in downtown core areas for the very same urban planning reasons throughout the country, all federal facilities were supposed to go into the downtown area.

So, you had your federal courthouse in the downtown area, also your federal building in combination with your municipal and state systems. ... state jail facilities were downtown in the Third Avenue area. The transport of prisoners is a very costly item, so not only for the community's efficiencies, but for the efficiencies for the state and the municipality, it was important to keep it in the downtown area.

Q: Was there any discussion about moving it back from the bluff?

A: Not really. ... If they moved the entire facility, it would vastly increase their expenses and it would also leave a rather major building downtown with no tenants. It would really just be cost prohibitive.

Q: Do you know if the court considered other sites?

A: No. They intimated a couple of times the courthouse would negotiate. If the city wasn't real cooperative that they might be forced to look elsewhere. I never took them too seriously on that though. ...

Q: After the process began, was there any information that could have been produced to change direction of this decision?

A: You're somewhat asking the wrong person in the sense that the city didn't make the decision on it. ... we have kind of a dual function. One is in the planning sense of hoping to locate public facilities in the right urban setting and that they do it in a way that enhances rather than hurts the surrounding area. The other function ... is in the regulatory sense dealing with the planning and zoning function and the seismic function and in the building inspection function, making sure that things are done safely. ... in terms of the decision as to whether or not to do it, that, of course, is up to the state.

Q: You couldn't have proceeded without planning and zoning approval.

A: Right.

Q: Wasn't there a city planning structure in place to evaluate the project?

A: Not to evaluate the project. The decision of whether or not to go ahead with the project is not the city's decision.

Q: If they hadn't gotten a permit, could they have proceeded?

A: No. If we'd have said it wasn't the right place to put it. But, our comprehensive plan said, yes, it is the right place to put it. But, there are certain conditions that they have to meet. Some of them dealing with the historical, with a certain amount of setbacks and landscaping. These are not

decisions of whether or not to do the project, they're just how to do it in accordance with city standards.

Q: Would there be any circumstances under which the city would say you can't build there?

A: The city can, I am not technically skilled enough to say what the information would be. That's why we have a Geotechnical Commission, to give some advice for that. You'll have to refresh me exactly on the recommendation.

Q: Against it. Is there any information that would have resulted in the city saying no to the project on that site?

A: ... I'm just saying the answer would be yes. What would prevent it would be that if it was zoned based upon a process of determining if this was totally unsafe to build anything on. But it was not [zoned that way] in terms of seismically. So the question then is ... what standards will make it adequately safe enough to build? That's the process they went through. I tried to appoint both on my Planning and Zoning Commission as well as on my Geotechnical Commission people that had a reputation for a high degree of professionalism. They did have a high degree of professionalism and also were very competent. So if a building was able to work its way through that system,

then it would meet, as far as I was concerned, the kinds of standards that were necessary.

Q: How likely do you think it is Anchorage will be in another significant earthquake?

A: It's 100 percent.

Q: When?

A: I wouldn't have any basis for saying that.

Q: How often do you think about earthquakes?

A: I don't think about it a lot.

Q: How many faults do you suspect Anchorage has?

A: I think there's probably half a dozen.

Q: Say the courthouse was built, and we had a major earthquake resulting in ground failure, building collapse and loss of life. How would you distribute responsibility?

A: It would be my feeling that if there was a major earthquake and if there was a general failure of the ground throughout that area that the courthouse would probably, because of its engineering, because of the process it went through, would probably be the least damaged of many other major public facilities in the area including a three-tower hotel which will have probably far more people in it than the courthouse at any particular time as other major

office buildings. I don't know if I would be looking to blame anyone on it. I would just actually, probably, be glad that it went through a process that was able to incorporate some of the, to minimize the risk.

Q: Is there anything that could prevent building on high-risk land?

A: I think it will probably display itself in whether or not the building was required to have earthquake insurance. ... [I don't] mean to trivialize the human cost, but the way in which that cost can be accommodated would be through the people that build the building. If the insurance cost on [the building] was prohibitive, that would drive the economic return that people are getting [down which would result in leading development] into other areas that were more stable. . . . The way in which, that you can direct development is basically through good scientific information, a good planning process, and then, I would assume it would be reflected through the insurance companies.

Q: What other insight do you have to share about this topic?

A: ... What complicates that situation is you don't build a city from scratch. You build it on an existing structure. ... You're gonna live in a less-than-perfect world. So what you try and do is minimize those risks. It's kinda the same question that you ask somebody, why do people in their own personal decisions, in their own lives, why do they do things that put their own life at risk. ... economics have a role in it, you try and balance that with minimizing

risk but economics will have an influence on it. I don't think it's the dominant influence.

Q: Could something or some information have stopped the construction of the court addition on that site?

A: I told the court representative, "You know, the zoning on it's OK to do that here, but ... I think we have some kind of ... special reviews you have to go through, special considerations." And it went through the process. The only thing that could've probably changed it would have been a decision that there could not be anything built there. But then once you make the decision, you then have to vacate the current one right away.

Q: If you could do anything to make the process better, what would you do?

A: I think there needs to be a process by which new information can be brought into the planning process. Whether it'd be ... update building codes on a regular basis, and deciding that certain things are grandfathered in, and certain things aren't. Safety measures should be reviewed. Then you have to make tough decisions ... [and consider] new technology in seismic construction. I think public buildings have a special responsibility.

State Senator/City Council Member

Q: Why did the community chose to reconstruct the town on land designated as high risk?

A: When the earthquake occurred, there were slide areas which were identified, which were the Fourth Avenue slide area and the L Street, or K. There were geologists who took variable views. Each person was consistent, but there were a variety of views about how careless or alarmist we should be with regard to that problem. I think the laypeople on the council, not being geologists, gave proper, reasonable judgement to that question maybe, if I were to go back, I would speculate that possibly the financing interests had too much sway in that judgement or colored the receipt by the politicians of the scientific information. Especially if, you know, the Mayor was involved through the bank.

... The city at that time didn't have unified government so there was no talk about moving the core area to midtown or Spenard or something. That was not gonna happen. ... The decision to rebuild downtown was a good decision and inevitable in that sense.

Q: Why didn't the city move back two blocks from the bluff?

A: Of course, at the time, we were talking about 1964, 1965, we weren't building Tower X or Tower Y or anything. So, it would've been hard, and this

may be a great limitation or admission, but, it would be hard to anticipate all those things coming downstream. And, of course, the farther you recede in time from the earthquake, the less pizzazz it has, the more argument will be made that construction techniques have been improved and technology can cure, it's America's way, right.

... To tell you the truth, the focus in the mid '60s was not on are we gonna have high-rises on L Street. The focus was how are we gonna get water and sewer lines hooked up and how are we going to get the roads working, it was an emergency situation here.

... And then, of course, I suppose Hickel's decision to put the Captain Cook where it was probably... [significant]. ... and I'm sure it had the effect of people saying, well God, if Wally's willing to put his money where his mouth is, then it's gotta be OK. Who am I to say otherwise I think that gave people a sense of if, [someone] smarter than we have been making judgements that we don't have to worry too much about this [then it must be okay]. ...

One reason that I was such a proponent [in the legislature] of the court system was that I was the senator for the downtown district. To me, and it wasn't just the court system, for example, I fought to have the legislature [keep] downtown alive. ... And we believed that there should be a downtown core which included public buildings. And that if we didn't do that, we would

have a Houston, Texas. We would have everything spread out come hither and yon.

... And then, what would happen then is that the lawyers would start moving out to where the courthouse is and pretty soon this downtown area would be a wasteland.

I'm glad it wasn't prevented. And I talked to a court administrator representative just a few days ago coincidentally. And he was talking to me about how this is going to be the safest building in Alaska.

Q: The various reports that address the seismic issues at the courthouse were explained. And the question of what information would it take to convince you not to build on this site was asked.

A: If somebody came to me in the legislature and said you're putting at risk x lives quantifiable factor of risk, I might say, well this is unacceptable. We'll have to move it. I'm thinking of the Hickel hotel across the street where people are sleeping. I'm thinking of a court system that's functioned there. So we're not introducing a new thing. And, I'm thinking that 25 years have passed since the earthquake, and that the world has moved...

Q: You mean nothing happened--no earthquake?

A: No, not only that, but the technology has moved on in terms of public safety. People are not coming to me, you might say that it was in my

obligation to ferret out that issue. Hypothetically, if I were Senator Jesus Christ instead of Senator [who I am] I might've said well that's very interesting judge and I want to help you, but before I do that I'm gonna go make my own investigation of the, you know, and find geotechnical experts I can talk to. No, I didn't do that. So, is that an obligation of the legislator? Maybe. Or is a legislator, at least in the more traditional mode, a kind of referee like a judge who is no wiser than the lawyers who come before him bearing evidence. So the lawmaker is not gonna be any wiser than the inputs that are brought before her or him, OK? Is that the way it should be? Probably not, but, in the real world, that's the way it is. And you might say that unfortunately, the advocates for the project were all lined up and had the expertise either coopted or lined up and [had] the truth...

Q: The geotechnical viewpoint wasn't presented?

A: Or the other view is out there floating and has none of the same energy or wherewithal to bring its case in. But as I remember, I do not remember any organized opposition to the project in Anchorage.

Q: Do you think a major earthquake is likely in your lifetime?

A: Yeah.

Q: How often do you think about earthquake?

A: I don't think about it very often, in truth.

Q: If there was ground failure and the building fell, resulting in loss of life, who's responsible?

A: I suppose I would feel like a tragic figure in a tragic play. I suppose I would assume part of the responsibility, I don't want to be too harsh about this, but that's the price of leadership. And, I think the judgement's a reasonable one. We must not let this downtown core be dissipated. And that's what surely would've happened--the Anchorage Times down, the court down, would've been terrible.

Q: How would you improve the process?

A: You could have a kind of environmental impact statement as part of the state process before an appropriation can be made. For example, an appropriation like this would not be just considered by the judiciary and the finance committees but by a resources committee or subcommittee [which would hold] hearings on the question of, the geotechnical question. So you could have a legal statutory requirement for a geotechnical kind of official note by a responsible agency, not just committee, but an agency that would have to certify, perhaps even quantify, a degree of risk as we do have fiscal, or any expenditures.

Q: How likely is it that geotechnical information would be an equal player?

A: I think it could be if it was structured that way. I mean, you know, we'd have a place at the table. It would change the way people approached these issues and bring the question to the forefront. But in this particular situation, at least with regard to the new courthouse, I would say that there's not much consciousness raising about that because we knew that the local government had addressed the matter and would have had primary responsibility.

I think you should note, that there is in addition to the horizontal relationship between the policymaker and the expert, there's also the vertical relationship between the levels of government being applied here. So at the state level of government, if we are told, gee, this project should go forward, the assembly is for it, OK, that's a fact. When the mayor is for it, or the Planning and Zoning Commission agreed to it, I am not as a senator going to try and rework all that, because it might even be inappropriate for me to do that. And I'm not gonna butt into the local government's determination. I'm gonna be focused on State expenditure from the standpoint of public need and then of course I have my own parochial interest in keeping the downtown core alive so that'll be a motivator too.

Owner/Financier/Developer

This owner/developer has financed the construction of several buildings located in the bluff area. He and his family also have developed other major

commercial and residential properties in the city. One building is situated on a graben directly across from the courthouse. The court rented space in this building for several years. He is a member of a politically powerful and active family.

Q: As an investor, how do you weigh risk assessment issues?

A: There are a number of things. One is, the whole world is filled with risks. Risk evaluation is not just based on private investors but a whole financial market that assesses risk. Insurance companies are based on that. Banks lending money are based on that. Any private money that's investing tries to assess risk. Well, simply the fact that there's earthquake insurance available for that area means, by definition within financial markets, it meets a financial, and therefore, a risk test. It's within the bounds of risk that happened all over the world.

Q: You have earthquake insurance?

A: Yes.

Q: What about this seismic issue. How are they addressed?

A: Part of it is this sense insurability. If you think in terms of isolation, you'd never do anything. Cause you'd be afraid to do everything. ... These decisions are based on, well, did somebody else do it and what were their risks and what

was their success or failure. Simply the fact that this whole area is insurable [is important]...

Q: How likely is another major earthquake in your lifetime?

A: In my lifetime? Well, because I'm not scientific, I'd say 50/50.

Q: The participant commented on a conversation with a construction contractor regarding the courthouse.

A: Unless there's ground failure, nothing is going to happen to that building. It would be the last building [to go]. But if there is ground failure, it's as vulnerable as. . . . any building that is susceptible to ground failure.

There are two levels of risk--the earthquake without ground failure, and what is the risk of that; and what is the risk of ground failure. I think the risk of ground failure is remote.

Q: Why?

A: Because if it didn't go in 1964, which is the largest earthquake in the century on this continent... .

Q: If one of your buildings fails in an earthquake, who is responsible?

A: Society in general. Which I contend is the general greatest responsibility.

... Engineers have responsibility. However, if they met building codes, which are based on society, [if the community] provides opportunities, does a developer who developed it have some risk? Maybe. Does somebody who

purchases it from somebody who developed it, [are they responsible]. ... The greatest responsibility is just nature. Things under which we have no control over it. We have some influence over these things, but we don't really have control over them. That's like airbags. If somebody buys a car that doesn't have an airbag and sells it to somebody and that person gets killed, is the person that sold them the car responsible for their death?

Q: The developer explains his view on risk:

A: You got to think in relative terms. Resources are used to do all sorts of things. Including making people healthy and saving lives. There are maybe an infinite number of ways in which resources can be spent to protect people.

Given limited resources, do we put the 100 percent into buildings to insure against that risk and ignore [other important things] because we don't have the resources? Enlightened self-interest is the greatest protection for people.

Q: A capitalist would say that.

A: What I'm saying, an educated people can protect themselves better than an uneducated people. So enlightened self-interest is the greatest protection. If you're aware of the things that are around and actively pursue protecting yourself against those things, that's the greatest thing we can do for society. Instead of the Orwellian controlling view. We're better off than a society in

which people are able to protect their self-interest because they have more control over it.

Q [The developer responds to a discussion about the increasing costs associated with developing on high-risk land]. ... Why develop expensive buildings on land subject to ground failure?

A: Because the risk by the community is viewed at less than the cost. It is the simple purest answer. The cost is earthquake insurance. The risk is the earthquake.

Q: Buy why take the risk?

A: Number one, I don't think it's that much risk. And that's supported by the fact that earthquake insurance is available at a modest price. That says that I nor the world views it as a great risk. It isn't just Lloyd's of London that'll provide earthquake insurance at a very high rate. The world does not view that as a significant risk. That's why I keep saying in a relative sense. You're thinking in terms of, well this incident took place.

Q: But it is expensive for a community to recover.

A: That was because most everyone was not covered. ... If you forget the potential risk of life, and isolate it to capitalist, the building risk, in fact, if everybody were 100 percent insured, an earthquake would be viewed as an economic boon. What created more jobs in California during the recession,

southern California than anything in the last three or four years?

Reconstruction, economic boon.

Q: Interesting perspective.

A: It's at the expense of,...

Q: The taxpayer?

A: No.

Q: People are paying.

A: ... I said if it were 100 percent insured. So it isn't the taxpayer. It's the people who risk their money in insurance companies. And that risk is spread throughout the world. So the economic boom that took place in southern California was at the expense of every investor in the world who had insured against that risk. It's money that would have gone into their pockets that are now going into somebody else's pockets. Instead of being a dividend to them, it had to be paid out in claims. If it's \$1, what happened to it? Instead of being paid out in a dividend, it had to be paid to go hire somebody to do a job. And where was that person employed? In Los Angeles, versus somebody in England or Tokyo or New York.

Now that doesn't justify destroying a building ... I mean, as long as it had utility left in it, it didn't serve an economic purpose. So, I'm not advocating for it. I'm just saying that, if everyone were insured, in southern

California, 100 percent of everyone were insured and there was not loss of life, southern California [earthquakes] would be viewed as economic salvation for a short period of time.

Informal Interviews with Legislators

In an informal conversation regarding this research, two Alaska State legislators expressed surprise that there was any seismic issues regarding the court site. Both Anchorage legislative representatives had recently approved the 1994 funding for the courthouse construction.

This limited knowledge is also reflected by another legislator who responded to my questions regarding seismic issues concerning the courthouse site. In a 1989 letter, he states that he is concerned about earthquake issues and asked about proposed earthquake safety standards regarding the courthouse. The letter has minutes of a judicial hearing attached which state:

The chairman asked "if the new building would have earthquake protection".

The court representative replied "the new building will have state-of-the-art earthquake protection. He noted that earthquake experts have been brought in to design the building with safety factors to take care of any seismic issue. The building will be built on a large concrete slab with flexible steel girders to provide maximum life safety support" (House Judicial Committee, 1989).

This conversation was the total seismic review at the state level.

MESO INTERVIEWS:
APPOINTED ADVISORS AND THE PROFESSIONAL COMMUNITY

Insurance Executives

The bank president interview provided the connection to this insurance company. The insurance company is one of the largest insurance companies in the state. It is owned by a member of a prominent, wealthy old Alaskan family. It provides insurance for a majority of the public and private buildings in the downtown area. The owner of the company constructed and owns a new high-rise building located directly on the L Street graben. The building is reported to have a site-specific seismic design which will result in the building falling in one piece in case of major ground failure.

This interview is with two insurance company executives, a woman and a man. In the interview the man is referred to as M and the woman as W.

Q: How do insurance companies assess the risk for building in the bluff areas for earthquake insurance?

M: This bluff is known throughout the country for having a high potential for earthquake damage. So, we don't necessarily assess the potential damage, but we have to know how to go and present the Building X to an insurance market that will write earthquake coverage.

Q: How do you market the insurance for the buildings on the bluff?

M: There's only a few insurance companies that will write the liability or the earthquake coverage because of where this is. For a while, after the earthquake, you could not build in this area because this is a known unstable area. Well, somebody, and I don't know who, they opened that up and started building buildings like this Tower X, Tower Y, and all of these right here on the bluff. When you go to the insurance company, the first thing the insurance company wants to know is are these built to the now-existing earthquake codes. And they will use the code that the city has passed as the primary criteria for underwriting.

There's another criteria that will be probably equally as important. Because of ... the companies don't want to write every building on the bluff because they would have a potential high loss in that case. So what they do is they will decide through actuarial tables that they can only take so much insurance here and then when it's used up, it's used up. That pulls in the reinsurance.

Q: What is reinsurance?

M: Tower X has a policy let's say in the A.A. Insurance Company. Right now we got \$21 million on that building including earthquake. OK, the A.A. Insurance doesn't insure \$21 million. The A.A. Insurance may only insure a

million, or a million and a half. They then go to other carriers and buy re-insurance and they pass off their exposure and their potential loss.

Q: How do they do that?

M: One of two ways. One of them is what's called a treaty where the A.A. Insurance, in this case, would have a treaty with several insurance companies that says we will [insure], any loss over let's say \$1 million, and we will take the next \$4 million of that. For that, we want a part of the premium. The A.A. Insurance Company then takes and pays the treaty re-insurance. Then they may have an excess treaty. OK, anything over \$5 million, we'll take the next \$10 million. ...

Q: For a single building?

M: No. It's their book of business. Their whole thing. ... they'll write the Tower X and they'll write other buildings not on the bluff.

. ... All right, let's take the reverse scenario. Let's say the Tower X wants insurance and A.A. Insurance Company doesn't want to subject their treaties to that earthquake exposure, OK. Either the treaty could exclude earthquake as part of the terms of the treaty, or A.A. Insurance views the exposure to earthquake is so great it would jeopardize the pricing of their treaty. So then what they will do is go and buy what is called facultative reinsurance. ... It is a specific negotiation with either an insurance company or several insurance

companies to only take a piece of that exposure. The facultative is a subject of the market negotiations because the market can change from June to December.

... You're pretty much at the whim of what the reinsurance carrier wants to charge you. ...

Q: Do we have both going on on the bluff?

M: I'm sure we do.

Q: Have you ever not been able to find insurance for buildings on the bluff?

M: I haven't. I'm sure there's those that have. Since the Tower X, there hasn't really been any new construction on the bluff.

W: Recently on one in a very small project in the downtown area, not particularly the bluff, that I got a response back from an underwriter that they wouldn't write coverage at this point in time in this downtown area.

Q: Do you think that has to do with the California earthquake's effect on the market?

W: It tightens the market.

M: ... When you have a major earthquake like Northridge in January, that begins to impact how much loss the insurance companies feel they can take in any one given year. ...

Q: What affects the price?

M: Several things. One is we do have a large abundance of reinsurance companies in the business. That allows the carriers to negotiate, to have greater capacity to offer and it allows carriers to negotiate very attractive terms for their reinsurance. The [fewer losses and the] more [financial] surplus, the greater ability you have to attract a premium. . . . Strangely enough, you take floods, or the earthquake in Northridge, I think they only figured there was a very small percentage of that loss that was insured because people didn't buy earthquake insurance. What happens is everybody wants to buy it after the event.

What generally happens, after a few years, you get to looking at that premium, we haven't had an earthquake, what is that for? [And it is dropped.] On the bluff financial institutions that are lending money to the Tower X will require in the loan covenants that you carry earthquake insurance. What's interesting is when they pay one of those things off, you know what they drop, is the earthquake insurance.

Q: Are the rates a lot higher for the bluff?

M: The rate on this building [which sits on the bluff] is just under 5 cents [per \$100 value], not counting the earthquake. ... and that will give you the normal premium. But for earthquake at this location, it's 7 cents.

Q: Do you think a developer clearly processes the risk associated with a project?

W: It's amazing. There's the risk-takers who can and have been very successful business people. Then there are the other people who are, I'm not gonna say they're a better businessperson, but they're less willing to put themselves at risk and want to spread the risk.

M: ... You can find one company that will jump all over and write this risk and you have another one say unhunh, no, don't want it, you're too close to the bluff.

Q: Is the lack of available insurance the reason for no new buildings on the bluff?

M: No. I don't think so. I think there's some [insurance] still out there. You might have to scratch a little bit.

W: You can usually--I'm not gonna say always, but usually--find it for a price. It's out there somewhere.

M: To put it a nice way, most of those carriers are prostitutes. Anything for a price. And we laugh about it, but I think that that's true. We always have one, and London's probably the world's greatest for that sort of thing.

Q: How does Lloyd's address such larger risk?

M: In Lloyd's, you have syndicates. And the syndicates are made up of individual investors who pledge their whole net worth to a syndicate. This pledge of a net worth, to draw an analogy to the U.S., gives 'em the surplus that they can then go and write premium. The investors will invest in these syndicates in the hopes of a return on their money.

... Or that this syndicate will give me a better rate of return than this syndicate will.

Q: This building is on the bluff. How safe do you feel?

M: There's no question in my mind if we were to have a '64 earthquake, we probably will be in Cook Inlet.

W: No. According to the geologist. We're gonna fall on our site.

Q: How likely is it to have another '64 earthquake?

M: I wouldn't have the foggiest idea.

W: I hope we don't. ... I try not to think about it.

Q: On a daily basis, how often do you consider earthquakes?

M: I don't ever think about it.

W: I periodically do because there were two earthquakes two years ago within weeks of one another. They both happened at night. And that particular time period, I was working a lot of late hours and in both cases I had just left this place. So, it's like, well I'm really glad I wasn't at the office.

Especially the second one because we came in and desk drawers were open and pictures were askew. The stairwells had sheetrock that had kind of peeled off. It wasn't a lot of damage, but I was just very happy I wasn't here.

Q: How many faults in Anchorage?

M: I haven't the foggiest idea.

W: I think we've got a couple like really major ones.

Q: If there was an earthquake, and Towers X building fell in, and people were killed, how would you assess the community responsibility?

M: I'm sure that the responsibility rests with the municipality. And they're building an ordinance section that's established these building ordinances because I think I can say in most cases people will build their buildings to fit the specifications that are put out by the municipality as far as their codes.

Q: If someone comes to you and wants to build on the bluff, would there be any information that would make you feel like it's your job to evaluate and recommend whether or not it should get insured?

M: No.

W: No.

Q: If they want insurance, your role is to provide it?

M: That's right.

W: Right.

Q: Your role is not to evaluate?

M: The role is to go out and find insurance. But, in that process, you obviously have to evaluate. Because, if you're gonna go and present the Tower X to an underwriter, you have to anticipate what that underwriter is going to ask you. ...

Q: Would you ever tell a client not to do a project?

M: I can't think of one offhand, but I guess there could be one.

W: I would do that. In my job, I deal with contractors. ... And I would probably have a problem with, oh, an electrical contractor coming to me and saying, well, we're gonna start doing concrete tiltups. And I would definitely make them reassess that request. ...

Q: One person I interviewed commented that if it weren't for loss of life an earthquake could be seen as an economic boom. Could you comment on that?

M: We've experienced that here with the Exxon Valdez oil spill. And Exxon pumped a lot of money into this economy when [they] drove the tanker onto Bligh Reef. There was a down cycle after '85, '86, '87 when the oil spill people worked. A lot of that money turned over into the community. A lot of it left. Some companies got refinanced by the work that they did. But I don't think I could say any disaster is good.

Q: What is important to understand about this process?

A: But, I think when decisions allow either variances or amendment from the building codes to fit a specific design or desire. A lot of those decisions are motivated by personality and by economics. Whether or not you lose life because you're sitting here and the next minute we have a 8.9 earthquake and we're out trying to tread water in Cook Inlet, I don't think for this, people who make those decisions at the time, that that's a conscious thought in their minds. They're looking at it from how much is that gonna economically benefit us to have this building here and taxable, to get tax revenues, to provide employment for people, all those kinds of things.

Or, you have the forceful person, someone like a Wally Hickel. People will respond to that, rather than, oh, but we're gonna have 450 people in this office building and they could be out in Cook Inlet. Not that I think that these people are bad, I just don't think that's part of the decisionmaking process because the whole motivation behind these decisions is economic.

W: I agree, and I think probably it's one of the best things about our state and about our city and it's one of the worst things. We're so big landwise, we have a lot of money, but we're so small and so political, it's so easy, you can call the governor, you can call the mayor, and you can pressure them. You can go in and you've got a lot of really fiercely independent, rebel-type people that make up the state. There's a lot of self-interest in that. I think they

sometimes, maybe, talk people into things because there is a benefit out there. It means more tourist revenue, more oil revenue, whatever, and sometimes I think maybe they make some decisions that could hurt us.

M: But, I think it's the force of personality or economics is what drives the decision making process and not one necessarily of personal well-being or the concern for life. ...

Alaska's known as the Last Frontier. We get a tremendous number of individualists who come to make their fame and fortune, they may have struck out twice in the Lower 48, so they come up here and they find a piece of land and they try to promote this idea. I think Alaska has allowed and fostered that kind of thing in the past and that's the reason we had [fly-by-night developers]. They use their personality until the economics ran [out]. ...

Q: How would you improve the system?

W: It would have to be a really grassroots campaign, from the people marching down Fifth Avenue and over to the city hall and saying you've got to listen to this. We don't want to lose life. There's plenty of other areas that this building can be built. ... But life's too short to sit around and worry about this all the time.

M: Well, it's kinda like, I want to spend my time attacking and dealing with things that I can make a difference with. Can I fight city hall? I would have to

say my answer today would be no. We could get all the occupants of this building to go down to the assembly chambers and we could demand a change, but I don't think there's any question that the force of [certain powerful families] would carry much more weight.

I think there's another thing. A kind of personal aspect of things. ... We get so wrapped up with success we replace it with \$ signs. People are afraid to love one another. They are afraid to have love be a factor in interactions and decisions. We feel that success is \$200,000 a year. We let money make the decision as to what is the right thing to do. We need to address the human element before the event, before the disaster, not after it. We always seem to love after the disaster. We help each other, we pull together, we mourn others losses. If we allowed ourselves to love before it happened we would make different decisions. But we don't. We only consider money.

W: The dominant factor is that we need to work. We need to feed our children. We are concerned with the day-to-day challenges. It's hard to risk that to do what is right but not recognized as right.

M: If a public official considered more than money and power he would ask, "What is the right thing to do? Do I allow this to happen?" We let money make the decision as to what is the right thing to do. Not love.

City Planner

A: . . . After the '64 quake, I wasn't even here yet, but, I think what was probably going on is, may have been economics and a desire to get things back to normal again so everybody can stay the same, make money again. Big investments were made in property in downtown. I think one reason why Hickel wanted to do a tower on the Captain Cook was to show that I'm here to stay and no earthquake's gonna chase me away and we want to keep the downtown viable. . . . Right after the earthquake, they did all that planning work that says stay out of these earthquake areas and we just kind of accepted the areas that the city already owned or the state owned. We walked away from all those plans. It's not real clear in any of the records why they did all those decisions, but I suspect it was let's get back to normal and get on with our lives.

Q: Have you been involved in courthouse evaluation?

A: I was around during all of it. They had some very exotic designs in the beginning. They made a commitment, I think they just made a commitment that they were gonna stay downtown. When we threw in the central business district plan, we have a goal in there to keep state and city offices downtown. And they even wanted . . . the main state office building to be there.

Q: Where did it go?

A: To midtown. So, anyway, there was a big push on ... Mayor Knowles at that time, that plan was out and he was very pro-downtown and I don't know whether that was because he's a downtown businessman and he saw the need to keep a viable downtown going--what his reasons were. He was very pro-downtown and he got the assembly to even commit money to do soils evaluations for seismic reasons to help convince the state that this was a good place to locate their building. In the meantime, then they got into this problem with the fire codes and then the state just basically walked out of downtown and went to midtown. ...

I think they, when they did the soils test for here, it was also applicable to the courthouse. And they had reviews done of the soils test on the courthouse was done by muckety-muck in California. ...

What it comes out to is how much risk are you willing to accept. What's an acceptable amount of risk. We went through that with the Cook Inlet Pretrial facility. It sits at the bottom of the bluff and that was a great concern of the Planning Commission when it went through. ... And their concern was, here we had a building that people that lived in couldn't get out. It's a jail. So they have no means of escape. And if there was a failure of the bluff and it came down on top of the building, they wanted to know what the risk was of that happening. And make a good determination whether or not

that risk was acceptable. And so finally after quite a few hearings, they concluded that the risk was a reasonable risk to take. That may be what happened on the courthouse as far as the decision to build or not to build. Cause that was not here, Planning Commission did not make that decision, that was a state decision whether to build or not to build. So they must have concluded that it was an acceptable risk.

Q: The project was approved by the Planning and Zoning Commission. What were their concerns?

A: As I recall, it was more of a design issue than anything else. ... The Commission had 'em do a bunch of site evaluations because they were very concerned about I Street. I don't recall the seismic issue being very great on the part of the Planning Commission.

Q: Seismic issue responsibility of state vs. city were mentioned.

A: Yeah. I just don't recall us raising that seismic issue as being a very big issue at the time. It was an issue. But the courthouse was already in a high-stress area, I think. And the addition is in a slightly less risk area? The decision to build or not to build had to go back to the building owner which is the state. ... I imagine a lot of political pressure was put on the state to stay here from the people that have rental office space around in here. So we got all these attorneys concentrated, offices concentrated down in this area.

Q: When it comes to seismic issues there seems to be a lot of confidence in engineering solutions. Could you comment on that?

A: The objective of all that engineering is to only make sure that the building stays in a condition that the occupants can get out. The building may have significant structural failure and that, but the only objective is, can the people safely get out. So, this building right now is "safest seismically" building in the whole city right now because it's the only one up to '92 Code. Cause they've added all these big pillars like that. ... You've got this one building, Tower Y, it's on these piers, so it can come right off the piers. That was very controversial at the time. Most of the others have gone in and just built huge foundations. A ballast to replace the soil that's been removed. ...

Q: Why do you think we have chosen to build on the bluff?

A: The view. High rents. You pay more rent for a better view. ... [The court] didn't want to leave, they had a lot of political pressure from surrounding property owners that if the courthouse moved out it would leave 'em high and dry. Of course, the city's policy would've been, we just wanted 'em in the downtown area. We did not want them to leave downtown.

Q: Could any information make the city decide not to allow them to build?

A: As I recall, the court ... did present some proposal to move the courthouse out of downtown entirely. But, I do not recall what his reasons

were. ... But that didn't go anywhere. I presume that was probably politics again that stopped it.

Q: Would the potential for ground failure in earthquakes stop a project?

A: It was enough for us to advise the assembly when they were doing the city hall site selection to stay out of the seismic risk area. We are more conservative about siting public buildings than we are about private sector. If private sector wants to take the risk, they can take the risk. We try to be fairly conservative about public sector buildings. With the court you had a problem with the building was already there. Do we abandon that site? I don't recall anyone ever saying let's abandon the site. So, I think, it basically was there and we just expand there.

Q: Who is responsible for ensuring the seismic safety of the community?

A: I suppose, the only thing the government can do is provide the information, at least the Planning Department. We can provide you with information that's the best information we have available on what the physical condition of the land is if you want to do something. We can advise you. If it's a public facility, we can advise you not to put it there. Sometimes, if it's a private facility, we can get rights to advise you through some of the zoning processes and some of the platting processes that it's not a good location. But, the risk has still gotta be accepted by the person that's building the building.

It doesn't just apply to earthquakes. The other place it comes into play is with avalanche hazards. We tell 'em where the avalanches are. That was a real nasty battle on that stuff because the people did not want to know. Because when they know, it affects their property value and they have to disclose it. After we did this study on the avalanche hazard and put that report together, there was a great public outcry to have that stuff suppressed. The assembly wanted us to throw it away. Here's information here that's been around now since 1964 about what the hazard is and people have short memories and figure it won't happen during their lifetime. This is a thousand year event, it's already happened, it won't come back again.

Q: There are some people who say there was no stopping the courthouse. That politics was just too dominant.

A: There's a lot of places where the decisions are made because of the way politics works. I don't think you could probably get the courthouse stopped anywhere. Maybe even a better example than the courthouse is Turnagain Northeast. Here we had an area where we had loss of life, it was a residential subdivision, light structures, and now we're going back and we're rebuilding. And that was all political pressure. It was very clear early on that that's not a place to build houses and we've made some dumb decisions. When we traded

land out, we didn't take the old stuff, because we thought it was so dangerous nobody'll ever rebuild there again.

In the late '70s they started a push to rebuild that. We were dealing with the movers of the community. Here we are at the high end of society, very wealthy people putting a lot of pressure on the assembly to allow them to rebuild in that area. We know what it looked like before. It's gonna look like that again. We are right back out in Turnagain because of political pressure. Political pressure was put on the assembly to allow redevelopment in the area.

The assembly went through, I think, two or three ordinance iterations to set up a way that, I think, relieve them of some responsibility. What they were doing was saying OK, we're gonna give you the right to rebuild as soon as you satisfy these conditions. And the conditions were, the property has to be in the same condition as if it was a new subdivision. Which means all these buildings have to be installed, all the streets have to be installed so that it's ready to go again. I think the assembly stepped back and said, OK, we've fixed it up so they can develop, but we've made it so damn expensive that nobody'll be able to do anything.

Well, these guys that wanted to develop the land have a lot of tenacity and they went back in and said, OK, we're gonna use the city's road improvement district process, lateral improvement district process, water

improvement district process to get all this stuff rebuilt for us. So they went back in and pushed to form these districts so the city would pay for these improvements, which we will be reimbursed for from the property owners, by paying special assessments. We will do all this for 'em so they will meet the terms of this ordinance so that they can build their houses.

Now, they're building their houses out there. [Some owners] know the risk ... But are unknowing people gonna buy into these houses now? Cause I'm not so sure that all of the people that were pushing development intend to live there. They just saw this property as being a great economic profit for them. Because it is wonderful view property. ...

We were dealing with [the powerful people]. I think there was always the front man on it. It was one of the [prime people], he was out pushing his thing. Now who's responsible for all those decisions? They have the assembly make all these decisions that these people can do this and the people put together the packages to do it had to come in front of the Platting Board. The Platting Board tried to stop the project. They kept asking for more seismic information and stuff and they got run over.

Q: Is there any information that would stop building?

A: I don't think so. They will figure out a way to make whatever project they're working on presumed to be safe and they're willing to take the risk it

won't happen to them during their lifetime or during the time they own the building. I think they go in and put an awful lot of reliability on the engineering work that's done to buy off on their conscience if they think there's actually something going to happen. I'm going in there, they explain, and make sure this building is the best engineered building for this particular site, I'm doing everything I can to make sure it's a good building, a protected building. I'm gonna take the risk that it won't happen to me.

Q: How likely do you think it is for a moderate earthquake in your lifetime?

A: From what I've been told by the seismologists, we're well overdue for a 7 pointer out of this fault that's across the Inlet here. Which, as I recall, is supposed to be on an eleven-year cycle is about when we get an earthquake out of this one fault. We're three, four years over that right now.

Q: How about a major earthquake?

A: A '64 size earthquake, I suspect it'd be probably not likely during my lifetime here. It will happen again, but I just don't, I think the occurrence of that big an earthquake is gonna be pretty far apart. Now I've been told that the same plates that caused the '64 earthquake were locked again. ...

Q: How often do you think of earthquakes?

A: I probably think about it more than average because I end up getting a lot of questions about it. ...

Q: How would you improve the process?

A: If money was no object, it would obviously be very wise for the government to start acquiring the property that's obviously of high seismic risk. The first thing to do would be, of course, to acquire the property where there's no development to eliminate the risk immediately and then slowly acquire all this. Originally, that was the plan of downtown. The city was supposed to acquire all this property. There's no way in reality that the City of Anchorage could afford to buy all that land. I doubt even the federal government would've been willing to foot the bill to buy all that.

Q: Can you think of a better way to explain the issue to movers and shakers?

A: A lot of them, when you start affecting pocketbooks and property rights, they don't want to listen to you. We have an assembly probably for the last six or seven years that is extremely reluctant to even use the condemnation powers. They don't want to acquire land from anybody except willing sellers. ... Cause they just feel so strongly about private property. ...

Q: Anything else?

A: Being a planner, it's often very frustrating on a lot of planning issues to watch good and practical technical judgements be tossed aside for political reasons. ... It's very difficult. I can remember people arguing against the redevelopment of that area and just being run over.

Court Official

This court official has been involved in the political process from the beginning of the decision process. He has been the project's lobbyist for State funds. He has served as the project negotiator as well as the spokesperson and project coordinator.

Q: Do you know when the site was purchased?

A: About '82.

Q: What was rationale for site selection?

A: 'Cause it was next to this building.

Q: Did you consider seismic issue?

A: Oh, yeah. We knew where the graben was. We had to weigh this thing from a lot of different angles. Number one, if we wanted to move the court system, it was my view you'd have to move the entire court system because when you start duplicating services blocks away, you have real problems in management and duplication of effort and a staff that's not well used. My view

was, the court system had to stay together, so that's number one. At least the trial courts.

Q: Was there a possibility that you could have moved away from the bluff two blocks?

A: Not in my view. We thought about for a while creating a new appellate court and we could move that away and then giving the trial courts the extra space, but it would only've given them a floor and a half. We didn't think that that was enough space. So, in realizing the court system had to be together, I either had to move it all or leave it downtown. And there was a lot of opposition to moving it. From the mayor, from legislators who felt that it could hurt downtown a lot.

As I remember it, we looked at a number of sites in the downtown area and their seismic characteristics, including the sites that the state office building once looked at. And we had people look at the different seismic impacts. And we sort of felt that most of the area downtown was a clay base and that, although we were closer to the graben, that anything of any site downtown would have some earthquake-prone characteristics. So the question was, do we move everything, and that didn't seem like the legislature was going to give us the money to move everything. Therefore, could we build here with

minimal risk. We determined we could build here with minimal risk for a number of reasons.

One, we engaged Dr. Shah from Stanford. He felt we could build here with proper design and there were tests throughout the area. We felt that we could build here if we wanted to. And it came down to be most cost-efficient to stay where we are. That's why we're here. When you look at earthquake risk, you have to trust somebody. We honestly tried to pick a person whose reputation was without question. Even though I seem to remember, in those days, they said we shopped around until we found somebody that would give us the answer we wanted. Which is not true whatsoever. We found somebody and the Supreme Court said they'd live with that decision when all these questions started coming up. This guy gave the decision that we could build here.

Q: Three reports before that.

A: There was the Harding report, which sparked a lot of this thing. The problem with the Harding report as we saw it, we thought it was: a. incorrect, and b. we thought that they had an interest, having [already] done a study saying you shouldn't build in the west end.

Q: The question reviewed the three engineering reports and sorted out three observations concerning risk, ground failure.

A: As I remember it, then we had McCool and McDonald saying one thing, Harding said the other. We picked some independent who was this guy, Shah, who we didn't know from Adam. The Supreme Court said, whatever he says we'll do. If he says we gotta move off of site, then we'll move off of site. If he says we can construct on site, we'll construct on site.

Q: What about the liability addressed in the Wiggins' recommendation and the professional criticism of Shah's findings?

A: As I said, what we did with Shah is, there were these conflicting reports out there as we saw it, we are not experts. We hired Shah because he was on the West Coast, he had no connection with Alaska that we knew of, I mean, it wasn't like anybody knew him and we felt that this guy was one of the leading experts there is, and that we'll hire him and do whatever he says. Whether he looked at an L Street slide or this or that, we didn't know.

Q: You basically accepted his recommendation?

A: Yeah. 'Cause we had different interests out there that we saw, and we didn't know what to do. Whether he took everything into account or not, I have no idea because I don't have enough background in that. I do know that that's what the Supreme Court said at that time. ... we're gonna hire an expert, and we're gonna do what that expert says. Rightly or wrongly.

Q: I have been told that there was no stopping this building. Is that true?

A: Not true. That's why we wanted a national expert to come out and had he said don't do it, then we would've gone to the legislature with those findings and asked for maybe the property that they had used for the state office building and would've asked to relocate the entire court system.

Q: You had three reputable engineering firms disagree with him.

A: I only remember two, number one.

Q: There was Lawson-Harding.

A: Which we didn't trust at all based on their early work.

Q: McCool-McDonald which said site not suited. Dames & Moore which said significant risk of ground failure. Wiggins who recommended against the location.

A: I don't remember anybody other than Harding saying don't build there.

I remember other people saying these are the risks in a 400-year turnaround, so on and so forth. The only person I remember, the only group was Harding and we felt they had a prior interest. We didn't know if their report was good. We felt that one of those other reports, I don't know if it was McCool or what, came down on the opposite side, and that we needed a definitive report because we were getting information...

Q: Say we have an earthquake, and the building falls down and people die.

Who is responsible?

A: I don't like the question, number one. I think there's a better question.

Q: What's the better question?

A: The better question is not that building. That building has been built to standards that I think are the best in the Northwest. It is this building. That's the real question, in my view. This building was built, it was worth x amount of dollars. It's right next to the graben. If anything goes down, it's this one and it's somewhat based on that decision.

Q: Because it's based on that decision because we decided not to build a big enough building?

A: Well, a. that's part of it. ... We didn't build a big enough building or we didn't make a decision to relocate the whole system.

Q: That's a good set of questions. Assuming this building falls down...

A: I think you gotta look back and say well somebody back in the early '70s made this decision to build this building. And there was no, as far as I know, outcry when this building was built. Which formed the cornerstone for most court decisions after that date because of the ability to fund anything else and the cost to fund anything else. The initial decision to build this building here drove almost every other decision. The one chance that we might've moved, Shah said we can build a safe building. I'm sure we have built a safe building. See, I don't think that one's going down.

Q: There are unknowns pertaining to ground underneath it?

A: I don't know that the [new] building will be fine. That's not why it's being designed. The design is to save lives. This building is the one I worry about.

Q: How many faults do you think are in the Anchorage area?

A: I have no idea. 70? [jokingly]

Q: How likely is it that we have another moderate earthquake. 6.5?

A: Nine out of ten.

Q: How about a major earthquake? 9.5.

A: One in 400-year event, as I remember.

Q: Depends on who you read.

A: Well, that's the way I remember the study. On the short side, it was 400 years. And I looked at the facts, said yeah well, we just had one, but that doesn't predict others. In that fault, it relieved pressure, whatever that fault is. But there are other faults. I also take into consideration here that bigger earthquakes are not as important events as big earthquakes in California because our big earthquakes tend to be deep and California's tend to be on the surface, as I remember it. Again, I don't know if that's true, but that's what I remember. ...

Q: How often daily do you think about earthquakes?

A: I live in West Bluff. When that building shakes, let me tell ya, sure everytime we have one you think about is this gonna be a big one or not, especially living in a stick building down on a floodplain beneath a slope that could fall on ya.

Q: When it isn't shaking, does it come to mind?

A: No, not often.

Q: If you could improve this system, how?

A: In the seismic debate, I think it was fine. I guess I don't have a problem with the seismic debate. I think the questions have to be asked.

Q: You think it worked?

A: I think on the seismic side it worked. I mean, if you said could I have the decision and do away with one thing, it would be politics. I mean, if I could get the city off my back and the legislature off my back and if they said you need to build a modern courthouse that takes care of the needs of today's society, decide where you're gonna build it and we'll give you the money, that's a whole different story than saying, we don't wanta kill the west end of town and you already own this building which we will not replicate for you and then come back and say even the addition you're building which will allow you over time to shut this building down and create a new focus is not acceptable to us.

You're gonna have to build a building that's gonna be full when you open it.

Those are the politics of the situation.

Seismic, I think debate's good. I think the questions are important. I think people's lives are important. I think the legislature has moved too slowly to do the things I think they should've done to allow that building to be built. As I read the reports, this whole district court building should've been closed three or four years ago. I want it closed. I think the state has tremendous liability sitting in that building after we've had studies and everybody's saying, well you better close it within five years. We've done drillings in the building and, you know, I don't trust that building. That's the least trustworthy building, even though it withstood the '64 earthquake. That's the one that worries me most. I want it knocked down.

Q: Every courthouse personnel I have talked to wants to be in the new one for safety's sake.

A: My people were in the D&D Building. The graben runs right under that one. And that's what I can't understand, why everybody yells at us although we're a public building. People come in, with the standards we're building to, and you've got a hotel here and a hotel there and office buildings around this whole perimeter, and they're yelling at us who's probably doing a

better job of building a safe building for the environment we live in than anybody else. I thought that was somewhat ironic.

That's where I think the seismic was good instead of building just a building. ... I think that's what that seismic drill, so I'm not upset about the seismic. I place a lot of faith and have all along in Shah who I don't know and nobody here did know, I mean, everybody said we looked for somebody who would give us the right answer. That is what probably angered me when I saw that. ... At least we'll have the ammunition to make the fights. All these other [local engineering firms] have warts. You got Harding that's out here and he's already done something in this area that we didn't know about. And we've got these people over here who want to construct this building or something. They got warts. We want an independent.

. ... And you may have said, well Shah's report was flawed. Or this or that. We didn't know it was flawed, if it was. I mean, nobody said that that day that this guy is flawed.

Q: Geotechnical Commission did.

A: This was after the Supreme Court ordered the report, had accepted the report, and we looked at the Geotechnical Commission as just a commission who wanted to kill the building anyway.

Q: Could you explain that perception?

A: I live in today, and the decisions I'm making today, and you're asking me to remember things about 12 [years ago], all's I remember is we had a commission. I think we had one of Harding's people, Harding & Lawson's people, sitting on the commission. They had written a report against this building and they're sitting on the Geotech. They've got a member on the Geotechnical Commission who's dead set against the building. You've got a Mayor jumping all over the lot. He was from day one. First it was, well I got historical people that need to save this and save that. I'm lookin' at him, what are you out of your mind, you see this junk, you want me to save. ...

I just shook my head at some of this kind of stuff that they were trying to do and I thought it was very political, but that part of the process, I thought the geotech process was very political because of the people they had on it.

And I figured, I honestly felt we had an expert who said we could build it and we could build it well. The hell with these people, we're gonna do it.

Q: Do you think the geotechnical response was politically motivated?

A: A. It was political; B. I had no problem giving them input where it was important like design structure. We'd already determined that we were going to build. Now Shah'd said x. ... And we just, from then on, we were only looking at how to build this building right. Not whether we were gonna build the building. So, we looked at those as necessary hoops we'd have to jump

through, which I didn't mind. I thought they'd look at it even more closely because they didn't like the project to start with. Which was probably a benefit for the public. ... They approved the design that was buildable. Not one that was gonna cost \$2 billion. The only thing that's out of the ordinary in this design in my view is the foundation.

I was convinced by what I saw that we could build a building and people would be safe. Now, I'm not convinced that we can build a building that will be functional after a 9.0 earthquake. However, I'm not convinced there's a building in this town that will be functional after a 9.0 earthquake. So, I can't look at it that way. Somebody decided they were going to build this town here. One thing I remember that Shah said, "if I walked over this hill and there was nothing here, I'd tell you not to build there. But you got a city that's already built there and therefore you have to deal with what exists. And we can make those risks no greater than anywhere else in that bowl where there is this clay." And I believe 'em. And I still believe 'em.

Q: If you could do over, would you still pick same site based on everything you know now?

A: Sure. I'd have to.

Q: How do you think the process worked from your perspective?

A: From my side it was frustration. We told the legislature we needed a building in the early '80s and the frustration of the legislative process was enough. We're '94 now. Plus, we have thought that the city was very political in the process.

Q: What do you mean?

A: One mayor blew whatever way anybody was pushing him any other week. The other we probably could've got him to go around anything I wanted to, but I refused to. For example, when we needed a million-and-a-half to finish the design on a bigger building and not go back to the legislature, he would've given me the money. ... But the Supreme Court felt that was a legislative obligation. What upset me about that was that I went in to the legislature and it was a blood bath on the Senate side. It had nothing to do with this building. It was because one legislator hated another who hated him. But, I mean, it was all political. So this project goes down because of the politics between two people. Pushing to the various interest groups. Yet, I understand that that's politics. But I would've gladly traded this property for other property if they were willing to relocate the whole system. And they weren't.

Q: Legislature or court?

A: The legislature and the mayor. ...

Q: Where did the energy to prevent to move come from?

A: The move? Well, it never came up as an open question other than if we can't build we're gonna move. But you had Wally Hickel, you had [other important people], you had all the downtown people, the mayor. That we're calling weekly. Wally's calling all the time. How's it going? This building wouldn't have been built without him. Even though there were tremendously strong advocates on the House side. The Governor was important. And, the Captain Cook is a prosperous hotel, I can't blame him for not wanting a slum down here. But, the fact is, if he didn't put that money in, it wouldn't be built today. You gotta understand, he had an interest well before he was governor from the downtown Commonwealth North and downtown business aspects. As did [other important people] and all the names you hear when you're [talking] about the downtown. In any event, as I said, given a clean slate, I would've loved to take this court system, say, out to midtown ...

Q: Really?

A: cause then I could've built whatever I wanted and it would've been great. There would've been greenery and parking lots. ... But there was no way that that was gonna happen. So the next thing you look at is can we move it downtown in one piece. And the only property that was cleared was that property up by the Sheraton. And nobody was big on that because they didn't

want to replace this building. They wouldn't have knocked this building down. They would've turned it into executive branch office space. So they would've been saying at one thing is, you people are so good that we're moving you with the rest of these state people. That's the way I saw it.

Q: Is there any way at all we could have moved it back three blocks from the bluff?

A: For now. After the next earthquake, it might be three blocks further from that. Remember how this graben's been moving. ... It's gonna keep movin', towards that mountain.

Q: [A discussion about the power of the 1964 earthquake occurred here]

A: I would've been scared to death. But I think the thing that you're missing in your study, and I've tried to tell you three different times, it is the lynch pin, it is the key, is the court was going to do whatever Shah said. ... If they had to go fight for another site 'cause Shah said everything's gonna fail, they would've done that. ... [The court] wasn't seeking somebody who would write the right report or saying we've got this conflict ...

Q: That criticism is there.

A: It did not matter what Shah said, they wanted a decision. And they had conflicting decisions and they had the more responsibility was on their shoulders and they said, we're gonna do what we want. One damn definitive

report and we're gonna do what they say. That is what the court said.

... For all I know, a rift could open up across here and come back. But, I'm just suggesting, whether we're right or wrong, that was the process. We decided to rely on this person. Whether we decided rightly or wrongly, we're not engineers, we had conflicting studies, it made good common sense to us what Shah said. Anything that shakes in this city can get down. You just gotta design a little bit differently.

Geologist/Council Person

A: In 1959 I was hired by a consultant firm to assist in preparing a master plan for the City of Anchorage. Part of my job was to prepare the physical analysis of the Anchorage area. I drew upon some very excellent information that had been prepared by Dorbrovoky and Miller for the U.S. Geological Survey. They had done a geological study of the Anchorage region and produced a clear map showing the placement of extremely fragile Bootlegger clay. They described the stability problem of this clay and identified where the clay had failed in the past. They pointed out slides in the area that had occurred over centuries. Their study was good work that continues to be respected.

At the time the report was simply circulated in the geological community. So I brought the information into the planning process. The

town was very small. For the most part the slide areas were still undeveloped. Using the information, we developed a plan which was safe for the future. It avoided development in seismic sensitive areas. But the plan was not followed. ...

Q: It's my understanding that immediately after the earthquake you were involved in some of the research that was done for the federal government and the local state housing authority?

A: Yes, I helped coordinate the scientific evaluation that occurred immediately after the earthquake. It was a professional community effort that within a few days had the input and support of some of the best geologists in the world. That work laid the groundwork for a larger federal task force which looked at the entire impact of the earthquake--social, economic, and so on. The federal effort was a thorough and well done look at what really had occurred. It was prepared by experts from various agencies. It made recommendations regarding post earthquake land use that basically said we should not redevelop the high-hazard lands along the bluff and on the slide areas.

But even before that larger study was done a group of geologists was directed to assess high-risk areas so that there would be immediately information to assess appropriate areas for reconstruction. This report was

done within a month. The two reports basically concurred regarding what land was high risk. The slide areas were not appropriate sites for redevelopment. I think we listed the L Street, Turnagain, Fourth Avenue, and Ship Creek areas. The federal government tied reconstruction money to not rebuilding back in these places. But we managed to rebuild anyway--although it took a while.

Q: Where did the federal money go?

A: A lot was spent under the Economic Development Act. So people living in Turnagain had access to 3 percent loan money for new development. Not only that, the federal government paid off all their pre-earthquake FHA loans.

Q: But could they build back on their Turnagain land?

A: No, the slide area was considered unstable. It was supposed to be parks. And in fact people were supposed to be removed out of the area. They opened some land on the hillside and created a new subdivision called Zodiac Manor. Turnagain land owners were given a [land] lot to release their land in Turnagain.

Q: But they ended up not releasing those?

A: Right. These new lots were to be exchanged for the lot in Turnagain, which was then supposed to be given to the municipality for park use only. That never happened. I saw it because I was there when they sent the agreement to the legislature in Juneau to be approved. It left the office and the

agreement said they must give the land to the municipality. The agreement said they can. So somebody changed the "must" to "can." The whole intent was changed. People got their Zodiac Manor lots and were able to keep their Turnagain lot as well. ... By 1970 people decided to try to build back in Turnagain.

Q: Actually, the area I want to focus on is downtown. How did that area--the L Street, Third Avenue, Fourth Avenue, bluff area--begin to be redeveloped after the quake?

A: Well, immediately after the quake they used the urban renewal process through The Alaska State Housing Authority. But the Alaska State Housing Authority then was working within the city, because the city had to approve the regulation, and zoning, etc. So the slide boundaries were accepted, and they had become law, in a sense. ...

Q: So actually federal money helped to buy that land and to amass the land. ...

A: Yes. With urban renewal funds the land was amassed, because what they did, for example, in the L Street area, was that they bought the land and relocated the people. They did everything through the urban renewal. Some people received tremendous benefit.

Q: Who?

A: The land owners. You see they got 3 percent interest loans, to rebuild, to rebuy, and to invest.

Q: So how did the urban renewal work--who owned the land?

A: Well, the land was supposed to be transferred to either the municipality or the federal government. ... Everybody knew it was to become part of a park. It was a park in the city plan. What has happened, though, was that the land did not seem to be transferred to the city. For years, you can see green on the maps in the land use plan, yellow for residential, green was for parks.

Q: So with approval of the city--ASHA received money from federal government to go in, clear off those structures, amass this land. ... so the question is how did the land become privately owned?

A: Because somehow, somewhere, somebody did not take a title to this land. Nither the state nor the city. The housing authority was dismembered, it disappeared, it was longer in existence.

I cannot tell you how or why. I have been here a long time and I am still amazed. For example, up until 1970 nobody rebuilt in Turnagain, because-- and we had that considered as a park. There were people who were fighting us, because they didn't want a park close to their house. See, they rebuilt close to the edge of the slide. And then by 1971 people were suddenly building like they had title to the land. There was and is still a struggle to stop building

there. But they keep pushing and now they are doing it. They are building right on the slide where people died. And they have found engineers who will say it's okay.

Q: Didn't it have something to do with the fact they continued to tax them as if it was taxable property?

A: No, no, they didn't. They were never taxed. But in 1970 somebody just paid the tax, and soon they said "If I paid the tax then that means it's still mine." So that was some deal, because from 1964 to 1970 they were never taxed.

Q: Okay, so back to downtown.

A: It was very much the same thing. ... They started rebuilding the L Street slide in 1970 also.

Q: How important was Wally Hickel's hotel?

A: Well, Wally Hickel's hotel, that was the sad part. He wasn't in the defined slide area, you know, but in a sense he was at the edge.

Q: How would you classify the location of that hotel?

A: ... dangerous, very dangerous. It is within [close proximity to] a graben, he is in front of it. Next time the graben may be behind him. No, it is very dangerous. I testified against that, I was on the Planning and Zoning Commission. But the problem was that his land was not classified as high risk.

... It was just outside, it just in back on the very outside edge of high risk. ...

I remember when I was at a meeting with [geologist] Ernie Dorbrowly, the mayor, and some other community leaders. The mayor asked "How do you put those lines here, how do you know?" The lines reflected the geological information and matched other site review information. And I remember the USGS geologists who had thought the line was the minimal. It was not the maximum protection, it was the minimum protection. It wasn't even the average protection. So when they went back and looked later the line had been reduced to a much smaller area that was reported for high risk. At the beginning I believe that the area where the Captain Cook is was considered to be high risk. I think the line was adjusted. There was lots of politics, lots of pressure. ...

So I know these things because I saw the map, I was part of it, and I followed it from the Planning and Zoning Commission. But I could never stop it--I never had support of either the Planning Commission or the assembly.

Q: You have been this community's most articulate opposition to redevelopment on high-risk land. How effective have you been? How open is the system in terms of processing scientific information?

A: Well, I think the only thing we have done might be improve some of the architecture and engineering design. But there has been no impact on location.

I think people have located in high-risk areas, with complete disregard as to if it is right or wrong.

Q: What do you think is the motivating force behind locational decisions?

A: The economic power of the people that handle these lands. These lands are all owned by the richest people in the community, by the most powerful personalities in and outside of politics. Wally Hickel is the governor, he was not governor at that time, but he gained. These people had tremendous power and many have gained power, including people on the Planning and Zoning Commission and on the assembly.

Q: You were on the borough assembly [city council]?

A: And the Geotechnical Commission. ... I helped create the Geotechnical Commission, as a member of the assembly, and then later when I was appointed as a member by the mayor. It was very frustrating, because you have very good people, yet all the members were professional engineers and architects. And I was the only person who didn't have to worry about my income being associated to the community I was reviewing. I think many of these people are so afraid to really do what they consciously think is right. Sometimes they are afraid to even discuss it. ... I have spoken because--I'm not an architect or an engineer, I'm a professor, and I am what I am. And I tell them the truth, but I don't have a job that depends on a contract. However, I

have found some people, on the Geotech Commission, to be pretty firm. I think a few have tried hard. I know that some have been very wonderful.

Q: What about the courthouse decision?

A: ... It is interesting. I remember when I first saw the proposal, and we were really convinced that we could not allow the construction of the courthouse on that site. Well, after enough time somebody decided to hire an expert, a geologist and a man that had been to many, many conferences that I had attended.

Q: Shah?

A: Yes, the gentleman presented something that amazed me, because I had heard him speak, before, in defense of to not put buildings in that area, which were high risk and to not try to patch up things.

He came to Anchorage and did an assessment in regards to the possibility of an earthquake in Alaska based on some statistics that had to do with the possibility of death in a car accident, on a super highway. Which has no real relationship to the problem. And the people that were sitting there like me knew exactly that this comparison was nontechnical. He's well known, if he says that there is a comparison between Anchorage earthquake risk and death in a car accident, we are supposed to believe him. They want to believe him. They know that what he said didn't make any sense--you could see the

faces amazed at what he was saying. But at the end they chose to listen to this person.

Why did he do that? You tell me. I could not accept what he said, it's a matter of science and a matter of conscience. By making a comparison to car accidents he shifted the focus of the argument, implying that a certain level of death is inevitable and acceptable. It's not inevitable or acceptable if you can clearly reduce death by siting a building property.

Q: What's the chance of having a great earthquake in the next 100 years?

A: We will definitely have one. ... Definitely. We have little earthquakes all the time.

Q: How strong an earthquake is necessary to create damage in terms of slide damage on bluff areas:

A: Oh, a 6, 6.2, 6.9, 5.8. ... It depends ... definitely 6 plus.

Q: What is the responsibility of the decision makers to the future--how far should our concerns extend?

A: I think we should build forever. Look at Rome and Florence, they are built for as long as the people are on this earth. When we build now, we should not be considering just the life for 1 year, 2 or 3 years; life goes on forever. The next generation will follow, even if the buildings are gone, they

will rebuild in the same area, where they built before. So we are starting a trend of building in the wrong places.

And also there were good economic reasons to do it. If you realize what will happen in cases of an earthquake--millions and millions and millions of dollars are spent to rebuild, to help people, and to reestablish an economy.

There were millions of dollars lost in the 1964 earthquake, incredible costs. Look what happened in California, it's the same thing. Now we have allowed rebuilding in the same way. It is insane.

And in a sense the American government is doing the same stupid thing everywhere. I had a friend and he lived on the Wabash. Everytime I talked to them the last 30 years, he says "Well, we had a new flood." And I say, "Why don't you move up a little higher?" "Heck," he says, "I get a new carpet from the government every other year." Now that sounds like a joke, but it's not a joke. Because the federal government uses our tax dollars.

So the public should be concerned not only for the loss of life, because they are selfish. Because if you look at how much it costs to the public of America, you can recognize that some risk can't be prevented, like a tornado or earthquake, it's something we cannot prevent. But there are things we can do to mitigate loss. With earthquake and flood construction, you can prevent a disaster if you build in the right place.

Q: If the ground under the court house failed in an earthquake and the building collapsed and people died, how would you place the responsibility?

A: The commissions and the mayors and the assembly. They each may try to say it is not their responsibility, imply we have a Planning and Zoning Commission or a Geotechnical Commission to worry about that and we look at the recommendations of the Planning and Zoning Commission. But the assembly and the mayor have tremendous power and control in the decision of planning and zoning. I think the mayor and the assembly are responsible as well as the commissions.

Q: What about the business community?

A: ... The business community has no conscience, they have conscience for themselves. They should have a city conscience, but they don't. ...

Q: What do you mean they have no conscience?

A: They have a conscience--this is a building, they're going to make money--they have a conscience as far as their family--I'm making money to send my children to camp or send my son to college, or get my wife a new fur coat. This is the way they make their decisions. But I cannot legislate their conscience. I can legislate the behavior ...

Q: How often do you think about earthquakes?

A: I think about an earthquake a lot, because it is part of my life.

Everytime I drive around Anchorage and I see the mistakes we have made.

Q: But in your daily life--making coffee, going out in the backyard, going to the courthouse, to the Captain Cook for a massage or for lunch.

A: No, no, I don't. In the early days, yes, right after the earthquake, I did, but I don't now.

Q: I have been told that after the earthquake the experts wanted to completely relocate the town--to midtown or the base of the mountains.

A: No, not to midtown, but it was the park strip [about 6 blocks back].

Never in midtown. In midtown there were problems with wetlands and lots of old junk. The idea was to move back from L Street a few blocks.

Q: If I want to have insight into what happened, is there anything you haven't told me?

A: Immediately after the quake, you know, a year or two or three, there was a continuing with the commitment. And then suddenly this commitment disappears, and is replaced by economic reasons. This problem happens all the time. We move from important social issue to social issues that are tremendously important at the beginning. Then the issue suddenly runs out and people have forgotten. They have gone to another issue, and another issue.

I think humanity doesn't have consistency or commitment. ... It has no commitment to the continuity of life over an extended time. ...

Q: Would you make one last statement?

A: Well, the thing is man is so busy, he has to do many things, and he has many responsibilities while he is raising a family, working. This is why the government is responsible for the public safety of the people. People cannot keep track of everything themselves. Government provides the agreed upon structure ... that this is, say, a place for a school, this is for a sidewalk, or this is the width of roads, this is the height of a building, or we build no more than two stories high in a residential area. So those are laws that we have used for centuries that have been developed, to protect environmental lifestyle.

Why can't we have equally law that protects people from disasters?

That says that you cannot build that close to the street, you do not build on a slide area, you don't build on steep hills? And I think we have not incorporated disaster protection into our zoning ordinances. We have to realize the government is responsible. Even if we don't recognize it, the government ends up liable. And I believe they are liable because they know and don't tell.

Planning and Zoning Commission Member

A: It would have been very hard to vote for anything that would have increased the density, intensity, and construction in what I know as a high-risk bluff area of downtown Anchorage. You'll find if you look at my record, I consistently voted against things. I did not vote for Tower Y, the court building, or even on the historical buildings that were to move to the buttress area. Because that might jeopardize the integrity of the buttress area. ... I fundamentally believe that you can build for shake, you cannot build for land, ground failure. And I think the potential of ground failure in that area is significant.

Q: What about the court building? How do you look at that?

A: Every time I go to the top of one of the buildings there for lunch or I walk into the court building, there is a consciousness that I know I am placing myself in a more risky position by going into that building than I might be going into a building somewhere else in Anchorage. Yet, I have to do business there. I like the view. I'm deciding that the risk for that particular piece of time, for me, is short. So, I will go in. But that's different from somebody that's there every day working. And in the court building it's different because people are incarcerated. There's holding facilities and that was a real big part of my concern. And that also you're not in the court building by choice, you're

subpoenaed to be there. You have to go into that building. So that was an even bigger element as it related to that building as opposed to other buildings. ...

My fundamental belief is the court [system] wanted to build in that location and they went as far as they needed to go to find somebody that would say it was OK to build there. It was going to be approved someday ultimately, and there was probably some wearing down of people. ... They already owned the site. The legislature's continually giving you money for planning the design. The court wants it there. There's a significant capital investment on the part of all of the construction around there, the legal community. I don't know that any kind of information was gonna ultimately make that decision different. It was on a railroad train. So all I could do is maybe raise consciousness. ... I think I was the only dissenting vote. Obviously I was not very convincing in my argument. ...

It's real hard to sit there and look at all those people and you kind of go, well am I missing something? You question yourself. I guess I just had a strong enough self, a strong enough feeling that this is dangerous. That I can't, with good conscious, vote to push the button, yes in this case. And they didn't have that feeling. And then there's the interests that are out there. There are all the pulls and tugs that you have to deal with. ...

If [powerful people] hadn't been in the room, would people have voted differently? (I don't know.)

Q: Wasn't downtown dying and being pressured by midtown development?

A: I don't think that was true. I was hopeful the court wouldn't move to midtown. That would have been bad. But there certainly was other property downtown. ...

Q: Why didn't we move somewhere else downtown off the bluff?

A: Well, it's the assemblage of land, is really expensive. It's because the land is there and that we might've had a lot of [work], to get a whole bunch of downtown lots and reassemble. ...

Q: What about the danger of downtown dying?

A: I think there's bigger death blows to downtown, National Bank of Alaska locating out of downtown. ... That wasn't something that I was particularly concerned about. [It was] hard for some of the interests on the board because they caved in. You know, the court had experts. We have this commission of experts.

Q: You call it caving in?

A: I think a couple of people might've liked to have voted against it but couldn't. Well, it's sort of a caving in when you are beat up with four reports.

Q: Last piece unclear to me.

A: Well, my friend Mr. M. was on there. He's the one that talked to me about being on an airplane, that you're taking risk. I don't think he would deny that it might not fall down, but what's the risk factor for him.

Q: How do you see the risk?

A: I believe that there could be another very, very severe earthquake in my lifetime.

Q: How do you explain the choice to build on risk land?

A: People don't know enough.

Q: There were over 300 articles in newspapers which talked about risk issues in Anchorage.

A: We have a very transient population, people aren't going to be there forever. Again, it's risk. ... You know, a realtor doesn't say, hey, you know these bluffs are made of blue clay and they can flop off. So, I don't really think people know. ...

Q: Why do you suppose its like that?

A: The fact is that we don't really recognize that we live in a earthquake area. We don't really believe it or something. It's much more pervasive than just the buildings downtown.

Q: How often do you think about an earthquake?

A: I do when I go up in those big buildings.

Q: Besides that--is it daily?

A: No. I don't think about it daily. ... [but I do think about them] because I was here [in 1964]. And I know what the big one is like. ... But people don't want to believe that it can happen, we don't want to recognize that the potential exists. ... I don't believe you can write laws that make somebody in the future do something you wanted them to do today. There are different power interests, and different things drive what happens.

Q: You mean the same law can be realized in different way?

A: Oh, yeah, sure. I'm sure implementation, for example in Los Angeles and Anchorage, is happening differently. The law may be fairly similar. Building code, how you're adhering to the codes and how you're interpreting code. It's different depending on awareness. And probably awareness is pretty heightened right after an earthquake.

Although, what happened here is Wally Hickel built his hotel right after the earthquake. But that's part of what was the Alaska experience. It always has been; I'll do what I do. It's the values at the time. ... We're gonna make this city OK and I'm gonna build right here; I don't care what these guys tell me. That's part of the culture of Alaska at that time.

Q: Is the court building better because process worked?

A: What I think is that it maybe makes us feel better but it's not better because instead of killing a hundred people, it may only kill 50 people, but we still have 50 people that would die when the building falls over the hill. ...

Q: What do you think was the motivating force behind the court decision?

A: Power and money tends to ultimately drive decision making. Wearing people down. I think that [the court representative] is a person who funneled the power and money in this process. He was the driving force that made this happen. Not necessarily because he personally wanted it to happen but he was the longest standing person. I think there's some breaking down; I always feel like you get worn down ultimately. You just want to get it done with.

We talked about the fact if the building had moved to midtown that they could've in fact built a cheaper, and built more of a building. ... Would that've been so bad for downtown? Maybe we would've had old town, new town, which would've been more urban. Midtown would've been very much safer for our city to consider. A lower scale downtown could still have had hotels and some business. We already have the hotels and the Arco buildings and some of those sorts of things downtown, we could've backed off on the court building.

Q: Does the review process work?

A: I think we can't make laws to make people do what they need to do. That it's something else, it's a desire to want to do it. ... The process is the process. Sometimes it's good and sometimes it's bad.

Q: What would make the courthouse review process work better?

A: I think it's all there. It's if you choose to use it. We have knowledge, zoning, geotechnical, assembly, financial interests. We have all the makeup to go one way or the other. We can say yes or no. And they all drifted to saying yes. The state legislature funded the money, the Geotechnical Commission finally found a report that they could approve, the Planning and Zoning Commission, they asked some really tough questions the first time. But they couldn't ask any more questions. Well what can we send them back to do now? They've got a report that says it's OK, they've got the funding from the legislature, they've got the support of all the business interests downtown. What more can we ask them to do? Are you saying, was there another law that could've been in place that I could send them back and I didn't figure out what that was? They'd meet that one and come back again, 'cause they wanted to build that building.

Q: If you had important seismic information, where would you focus?

A: It's so hard. I guess my first thought is that people in general. That's the hardest place to do ... If I decided to spend a lot of time and money, I might be

able to heighten awareness in this community about those things. Maybe they'd start going to their legislators and say don't spend the money and they'd go to their municipal facilities and say don't do this. But it would be a very hard uphill battle. ... I don't know how you get to the banking, financial interests. That's a harder push. That is the focus. Because I could do all of this and it could still have all that real power and money that would be pushing against the other interests.

Q: Why do you think they push?

A: Because I think their goals are different. Their goals are to make money and just the bottom line. And that they aren't real global; they're more narrow. They wanted to make money with their piece of land--and they didn't care or worry about someday that building falling down. ...

Q: Anything else important?

A: You know what runs through my mind? We're all gonna die sooner or later, so why hold up this building cause we're all gonna go at some point in time, maybe somebody's just gonna go sooner in this building as opposed to later. I just can't be responsible for somebody going sooner as opposed to later. But, we are [responsible]. I don't know if I could've said that at that point when I made that decision. But sitting here now and reflecting on life. But we

are all gonna go sooner or later. We can do all these things in the world to mitigate going sooner, ...

Q: Do you think that there is any knowledge that could change this process?

A: No. I don't. It was a train that had already left the station. We've known all that stuff on Tower Y, on Tower X, look at the intensity of development that's happened after the earthquake. Do we really know more today than we knew in 1964? Do we really need to know more? We may have better technology about mitigation, but we don't know anything yet that makes it so you can't move the land. You can't fool Mother Nature. We knew all this then.

Q: What's the point of doing reports?

A: I don't know. Have we stopped anything from happening? Other than those little historic buildings and probably nobody really wanted it to happen. ... We're building back in Turnagain. They got that subdivision. They wore the community down and we got far enough away from it. Have we really done anything in this community different? We might be building our causeways to a higher standard on roads and a few things like that, but have we really done anything new? No, we haven't. And I guess I'm feeling the frustration. You know, that you could make a difference on some roads, on

some design things. I'm really thinking now, I obviously didn't make a difference [on this issue] and I couldn't have made a difference.

Why go through this process? I think for a while it was worth trying, but obviously it doesn't make any difference. You can eventually wear people down, or find the person that says it's OK to do this. Maybe we went through this process and we saved the 50 people. Maybe that's OK. It cost us all a lot of money. It cost us all a lot of time. ... Maybe that would've been money better put into a shelter for homeless children. This interview has been a good assessment for me because I do really feel that as a planning commissioner, I made a lot of difference in a lot of places. I can think back and say, yes, I can look at this town and feel that something's better in this town but not in that area, not in earthquake mitigation. Nothing is better. Maybe the building.

Geotechnical Advisory Commission Member

A: The Municipality of Anchorage Geotechnical Advisory Commission is charged with looking at construction that occurs in ground failure Zone 4 or 5 areas as well as any other thing that we'd [think we should examine]. ... So that's how we got the court project. It happened to occur in an area where there was high potential for ground failure. There were several reports that said that ground failure potential was there and that it was probably not a good idea, and not the best use for that particular property. The Geotechnical

Advisory Commission essentially agreed. That was pretty consistent with what they said in all Zone 4 and 5 areas, no matter what the construction. ...

Whether it's a public use building or a house, if it's built in one of those areas, our number one consideration is don't build there. That's not realistic given the area and the value of the land and people wanting to have good views. In the case of the courthouse, it's fairly logical to attach a new courthouse to an existing courthouse building, at least so they can work together.

. ... We had several meetings with the administrator of the Alaska Court. Some of them were fairly heated. Because they felt that that was the place to put the courthouse building and that putting the new courthouse removed from the existing system just didn't make any sense. From a functional standpoint, it doesn't. But, from a siting standpoint, it really did and it still does. Of course, we're well beyond that now. We weren't going to win the battle of getting the courthouse moved because the Commission is simply advisory in nature.

Q: What do you think were the fundamental reasons for not moving courthouse?

A: I think there's both economic and political reasons. I don't think that people in Anchorage really realize what a magnitude 9.2 earthquake with a long duration can do. People that were here have short memories. There's the

political reasons of, we're gonna build where we want to build, that's our right, we own the land. Functionally, it was just a place to put it. It would be more expensive to buy other land and move it someplace else and there'd be a lot of long-term expense associated with integrating and coordinating the functions there with someplace else in the city. There were a lot of economic, political, and functional reasons for making that choice.

The geotechnical engineers essentially said, you know, it's really not a good idea. Harding-Lawson said, don't do it. They took the conservative end. Shah took the liberal, or non-conservative other end and said, yeah, go ahead and build it, it doesn't matter. And then you had everybody in between. I think Wiggins really intimated, don't build there, but if you're going to do it, recognize the risk and be willing to accept that risk.

Q: #1 on his list was to move.

A: I know him and that's pretty consistent with the way he goes about things like that. And, you see, Shah, he flies in in a day, looks at everything, flies out, and makes his decision. He's going to have a long-term effect on the city, I think. Because of his notoriety, people listen. The guy's brilliant, but he doesn't know as much as many of us that have been around for a long time now. That's not a very good place to put that building.

Q: Could the site fail in an earthquake?

A: It could be a 7.5 on the Castle Mountain Fault. I mean, it doesn't need to be a 1964 brand. ... We can't say it will without a doubt fail, but the potential is there and, I think, the potential is high enough that you wouldn't typically site a high use public use facility in an area like that.

Shah said, go ahead and do it and here's a couple of things you might do. I think what the Geotechnical Advisory Commission did is put pretty stringent requirements on what they'd have to do if they were gonna use that site. And we knew they were going to. I mean, there's was no doubt. And so we just made darn sure that they had some specific requirements as to foundation and framing and things of this nature. Shah and his colleagues [were asked to] write a report that gave special recommendations and special requirements for design and construction in that area, which they did. You know, the slab foundation is one of them. The eccentric bracing is another. I think it's one of the first buildings, if not the only building in Anchorage, that has eccentric bracing. ...

Q: If ground does fail, what's the possibility of building surviving?

A: ... If there's localized failure, then the mat is designed to take localized failure. ... but if you had that whole bank go away, there's not much you could do. ... But, a lot of times what they found in the '64 earthquake is there were a lot of grabens formed and a lot of cracking that went around well-designed

foundations. It would come up towards a building and just actually veer off. ... [The courthouse] mat is designed well enough that there'd be some of that, but if there were a failure behind the foundation, where that whole block either slid or tilted, then there'd be a major problem. ...

Q: How would you explain reconstruction after the earthquake.

A: Well, I think what you had is you had outsiders come in and Alaskans saying, hell, we're not gonna listen to those damn outsiders. We're gonna build and we're gonna make everybody have faith in this community and we don't want people to run scared and we're gonna do things to just show them that we have a lot of faith in the community and the fact that it's gonna continue to grow.

As far as Tower X; the Captain Cook Hotel I think, that was a lot of Hickel saying we're just gonna show people we can do it. Some of the other ones that came up in the '70s and it was just a matter of an administration that wasn't willing to say, this is not a safe area to build The administrations at the time just were not willing to fight the moneyed interests on these issues. And so they let them build there. They could've very easily zoned it for park land or something like that and purchased it at one time, but they weren't willing to do that.

Q: How likely is it for Anchorage to have another moderate earthquake?

A: Oh, I think if you, historically, you look at what's happened to Anchorage in the past and nobody would doubt that we're overdue for probably a pretty major event.

Q: A major one? Is it possible in the next 20 years?

A: I'm not really into predictions, but I don't think it's beyond the realm of possibility. And I think if you talk to seismologists, they'd say the same thing that that potential is extremely high.

Q: How often do you think about earthquakes?

A: Well, because of my business, probably daily.

Q: What kinds of pressures exist between clients vs. contractors on risk-related projects?

A: Well, there's a couple of issues. There's the issue of getting a geotechnical engineer to produce a report that adequately defines how that site's going to act in a saw-motion earthquake. And I think you can go around town and get several different answers for any given site. Especially along the bluff areas. There's some people that will downplay the potential problem; there's others that will tell it like it is; and there's probably others that are way overly conservative. You get that full range. It's not like you have, you need a new heart valve or you don't need a new heart valve.

What the owner is willing to accept as far as the risk depends on what you're gonna do on any given site. I mean, there's some owners that are willing to accept a helluvalot of risk and there's others that just aren't willing to accept much risk. And if that risk is adequately defined to them for them to make a decision, then it's up to the owner, except when you start bringing public into the building, there's a whole other level that needs to be looked at that I don't think is adequately addressed all the time. Also, I don't think the builders of facilities totally understand what it means to build a building in an area where there's potential for a strong motion earthquake. As a structural engineer, you know, there's four levels we design to.

The first level is under low earthquake activity, small earthquakes, we want no damage whatsoever.

Under moderate earthquakes, we're willing to accept some architectural damage but no structural damage.

Under a strong motion earthquake, we don't want collapse.

And then there's some places that, even under strong motion earthquakes, we want to have operational after the earthquake. ...

But I'm not sure owners really recognize what non-collapse means. That means that you may walk into this building and it may be standing up, the frame may still be here, but it may be totally unusable and the cost of repairing

this facility may exceed the cost of originally building it. I don't think owners fully understand the risk they're taking. You're already taking a lot of risk building in good areas of Anchorage. OK, so what you do is you go and you build it on a bluff and you compound that risk many times and that's not conveyed properly. Engineers and architects and people sort of back away from pressing those issues. ... The only way they understand is when we have the next, Richter magnitude 7.5 in the Castle Mountain Fault and their buildings fall down.

... I had this theory concerning structural Darwinism. There's certain buildings that are just gonna fail in another strong motion earthquake and they'll be gone and the buildings that replace them will be much better.

Whenever you go into a place where there's been a major earthquake, it's terrible the loss of life that occurs, but what typically happens is many years later when everything is rebuilt, it's much better. Everything is much better when they go back and replan and redesign because then they take the situation much more seriously. ...

Q: I spoke to a banker that felt that it's been 30 years since the earthquake and his decision to rebuild has been proven right.

A: What's 30 years? The life of a building is 50 to 60 or 70 years, or longer. ... So he hasn't won anything yet. I'd be willing to bet that he won't

win in the long run. People's memory on an earthquake is sort of like childbirth or breaking a leg. You forget what it was like and so you do things that cause it to happen again.

Q: If the court building fails and people die, who is responsible?

A: Well, I think the major responsibility in a situation like that would lie with the Municipality of Anchorage in issuing the building permit to build in that area. Because once that building permit has been issued, an engineer comes in and designs the building. And he does everything in accordance with stated practice after that.

Q: Could the city have said no?

A: Oh sure.

Q: Based on geotechnical issues?

A: Yeah. They could've very easily have said no. The building department has the ability to prohibit construction in areas that they consider unsafe.

They never exercise that power because of the political ramifications. Because if they said that, then they'd have to do a lot of studies necessary to back up that particular decision. So they tend to back away from decisions like that rather than having a blanket no to construction. Unless there's something already in the ordinance that allows them to do that. ... And they just consider

the building owner to be willing to take that risk. If they're willing to take that risk, that's fine.

Q: How do you think the system works? What would improve it?

A: I think it's working better. I think the building safety department is doing things now that they didn't do in past years. ... I think their hands are somewhat tied just because of politics and economics as far as limiting construction. ...

If I could do anything I wanted as far as the system, I would prevent certain types of construction along the bluff areas. I would have planning and zoning regulations in place that really limited the type of construction that you could have in areas that have been known to fail in the past or we think have a high probability of failing in the future. I think what needs to happen is a continual education process with people within the municipality and municipal assembly. So, the earthquake, potential earthquake threat is always out there and people are continually thinking about it ... getting more into a mitigation type way of thinking rather than just develop at any cost.

Q: I have come across some reports that have different reoccurrence rates for an earthquake in Anchorage. They imply less risk.

A: I think what they're saying is that it's a 90% probability of nonexceedance for a magnitude of a 1964 earthquake and the recurrence level

for that is 5000 years. ... It's not gonna take an 8.6 Richter magnitude ... earthquake to cause major damage here. And the [reoccurrence] potential for lower magnitude earthquakes on fault systems closer to Anchorage are much much lower. I think probably 500 years is more like it ... but that doesn't mean you can't have one tomorrow.

Q: There seem to be reports that have a new interpretation of the risk factors for high-risk areas in Anchorage.

A: Yeah, and I think it's a matter of opinion. I didn't particularly care for that N&N report anyway. I think they tend to say what the person who he's working for wants him to say as opposed to what some of the real facts are.

Q: Anything else I need to know?

A: I think one of the things where there's a problem is you have a technical community in Anchorage that goes from a few that are very interested to a majority who have really sort of a disinterest in the situation. ... That has an effect on the political decisions that are being made because there's no political pressures put on anybody to make what I consider correct decisions. They have the moneyed interests and influence interest pushing on them and they're going to tend to listen to whoever has the most influence.

If you have a small technical group saying things and you have this big financial area pushing, well, it's political. Politicians are gonna listen to the

other side and make decisions that are fairly risky. ... [Also,] there's regulations on the book that say if you build along those bluff areas, you're to do certain things and they're not enforced. So people go ahead and build and they don't do the stabilization and the things in accordance with the regulations. ... If we have a major earthquake then you'll find a lot of new regulations and a lot of people start really worrying about this thing. Earthquake stuff is of zero interest to the politicians.

Because a hole in somebody's road out in front of their house is something they hit every day. An earthquake comes once every 20 or 40 or whatever years. The politician is going to get more calls on ruts in the road than he'll ever get on earthquake safety. He's responding to whatever's gonna get him the votes or whatever the last phone call.

Another problem we have is the way [building] codes are written, . . . the minimum thing you should do to really satisfy the basic theoretical aspects of a design. In earthquake engineering you could be bordering on the illegal if you just use that only. Well, what's happening is because of competition between builders, building suppliers, and engineers and architects, this minimum document has now become a maximum document. ... It's a real problem.

We spend a lot of time in design. We take earthquake loads, that are very theoretical and inaccurate and hard to calculate and we feed 'em into a

structural system and it's very difficult to determine how those loads are going to be distributed through the building. And then we use these fancy analytical techniques to calculate numbers for design. It makes more sense to not worry so much about the loads and the exactness of the loads coming in but instead to worry about detailing of connections and worry about how the thing is being built more than the fancy analytical techniques that are used to calculate all these numbers, God knows what the accuracy of them are.

Q: Anything else?

A: I think the system in Anchorage is improving. I'm not sure within the elected officials that it's improved that much, it's probably gone downhill somewhat, but I think as far as some of the building safety people, you know, there's some real efforts being made to try to get some systems in place to at least help out after the next earthquake. That's a good sign. It took 20 years to make that happen.

Project Architect

The interview opened with a discussion of the engineering reports and their recommendations and led to the question if there was any information that would have changed the decision to locate the court on high-risk land.

A: ... as a result of all the previous reports and Wiggins, which was fairly inconclusive, the court system, the Supreme Court decided that they were, in

fact, gonna relocate and. ... In response to that, the downtown association hired Woodward-Clyde to look at the situation. Woodward-Clyde had a one or two page letter which suggested that some more analysis should be done, that there were certain questions that should be answered, and then the court system was in a quandary. What'll we do. What they decided to do was try to find somebody with unimpeachable national, or international, credentials that could look at all this stuff and help them decide what to do. That person was Mr. Shah. That's how Professor Shah came into the picture.

Shah looked at Woodward-Clyde's letter and the rest of the stuff and essentially he agreed with Woodward-Clyde that there were some questions that needed to be answered. Primarily, how much ground displacement should be anticipated. Because what the earlier reports really didn't address was that, yeah, there'll be some ground movement. Everybody agreed that that potential was really there. But, it's how much and what is the return period is were really the questions that needed to be answered. So Shah advised the court system that they go ahead and get those questions answered. The court system hired Woodward-Clyde through our contract to investigate those issues and they prepared a report.

Q: I didn't know the court considered relocating.

A: Yeah, they did. They didn't have another site, but it's my recollection that it was publicly announced that the court system had decided to move out.

Q: I have interviewed individuals who have implied that, no matter what, this building was going to be built on the downtown site.

A: That's not true. ... From the court's perspective, that's not true. Maybe from the community perspective that's true that it was never possible for the court system to say we're leaving downtown. But the court system specifically, through Wiggins' report, evaluated the options--staying and doing nothing, staying and building a building, going to midtown. And he tried to help them evaluate what, tried to quantify those options. As far as the court was concerned, that was a real option and they looked at it seriously. My recollection is that they decided that's what they were gonna do. That triggered the downtown people, getting involved and forced the court to re-examine some of the issues.

Q: How is that site going to perform in another earthquake?

A: That was a question that everyone had. The question was since it didn't slide in '64, was there some reason why this didn't slide in '64. The conclusion was no. That the underlying geology is the same. There's no real reason that we can identify that this site should be less susceptible to sliding than anyplace else. ...

One thing that was explained to me, and they kept trying to make me understand this one, we talk about a 5000 year return period or a 10,000 year return period. That doesn't mean that you're saying it happened in '64, so it's gonna happen again 4000 years. If we really believed it was gonna be 4000 years, we wouldn't worry about it. Or 1000 years, we wouldn't worry about.

Q: So you have designed a building that recognizes the potential for ground failure?

A: And the amount of ground failure that we're designing for is somewhere between three and four feet. I couldn't tell you the exact numbers. That's an important number for us as designers because, unlike previous reports which suggested yes they'll be ground failure and if there is ground failure, then you shouldn't do anything.

Q: But I thought that you couldn't design for ground failure.

A: You couldn't design for it. Well, that's true at a certain level, but the question, or the challenge for the design team, was that, given three-and-a-half to four feet, can we design a structure that will hold together and maximize life safety issues with that type of movement?

Q: Why would the community place the building here?

A: Number one question -- money, dollars. The costs of moving the court system to midtown were much greater than what's going on right now. Price of

oil went down. The original project was gonna be \$70 million and we're looking at \$40 [million] now. So dollars was a big driver. The court system, in order to do something, they have to get money from the legislature. The costs of moving were, relocating, were significant. The downtown issues, I couldn't tell you too much about, but I know that obviously the people who have businesses and the attorneys and most types of people that are down there have a vested interest in keeping the court system there. So I know that there was some pressure with respect to that.

You know what the court system wanted to know from us after hearing from Shah and from the whole group that was involved in that is that, is it feasible, and can we practically build a structure that will be reasonably safe. I think Shah's conclusion is that if we accommodate that three to four feet, the amount of shaking that you have involved, which is, I hesitate to quote a number, but at least twice what the current codes require.

Q: Aren't those codes minimum standards?

A: They're minimum codes but they're not insignificant or minimum numbers. The numbers are a lot bigger than what we use to design. ... [The court] design has to exceed those and accommodate the ground movement that Shah through his analysis and Woodward-Clyde through their analysis determined is a reasonable level to anticipate. I think we've got Shah's criteria,

with two return periods. One is 5000, one is 10,000. ... Then Shah updated his design criteria based on the results of Woodward-Clyde's analysis as well. It's not just a linear process. It's everybody working together.

Q: Who do you think is responsible for assessing the risk and insuring public safety?

A: I don't think it's that simple a concept. I don't think you can say that the building department is responsible for that. Or that the architect's responsible for that, or the building owner's responsible for that. I don't think that there's, hard to say that the buck stops, where the buck stops. I don't really have an answer to that question.

Q: I talked to a developer who said if he got insurance it was an acceptable risk. There are many views on who should say no to a project. What do you think?

A: My opinion is that the weak link here is the developer who says, it doesn't matter how safe it is or whether people may die in this thing, but if I can get insurance to protect my financial investments, then everything's OK. That's what bothers me the most in this whole situation is that it is, the architect or the engineer can't stop the process. If you tell a developer, don't do it, he'll go hire somebody else to do it. The building department potentially could, but, that gets wound up in the whole political process. Why are we

building in Turnagain slide area again. Big question. Money and politics, it seems like. The thing that bothers me is the developer and insurance company situation. Of course, that wasn't the situation we were dealing with at all [concerning the courthouse].

Q: How difficult is it to be an engineer or architect to work in a community with this kind of client/profession pressures?

A: I'm not probably the person to ask because most of the work we do is for governmental clients.

Q: It's still a relationship.

A: Well, it's relationship, but as this particular project shows, with the Harding Lawson report that we told the court system that, here's what the results were and, as far as we can tell, we've got a problem here.

Q: There is a criticism that the court just kept shopping until they found someone who would tell them what they wanted to hear.

A: That's an obvious cheap shot. The court system's problem didn't go away when the Harding & Lawson's report said don't build here. They still had the expansion needs. They have to do something. They can't just stop and say, well OK, everything will be the same, we won't get any more cases, we don't need any more judges. They need this space. They continued to pursue the process and look at their options. It wasn't a question of going to the right

doctor to get the right answer. It was a question of continuing the process and going with the information and the way the process went. They went to Wiggins and they said OK let's evaluate all this stuff. They went to Dames & Moore, second opinion, OK. Dames & Moore said, yeah, that's about right. OK, we're gonna move. Let's look at it. Let's look at how we're gonna move. Let's look at what the impacts are. Let's hire Wiggins to help us evaluate our options so we can decide what to do.

Q: Wiggins' first recommendation indicated the court should move. It did recognize the difficulty concerning the liability of the current buildings, but wasn't relocating the project his highest priority?

A: Wiggins was very inconclusive. Harding & Lawson wasn't inconclusive, but Wiggins was.

Q: Dames & Moore wasn't inconclusive?

A: Dames & Moore wasn't either. They basically said the same thing. I can remember the meeting where they said, well, if it moves, all bets are off. And at that point, that made sense to us. We'd never designed a building on ground that was going to move. ...

Q: As a professional how do you respond to the risk assessment process? What is your role? Who tells them not to build?

A: I do believe that there's risk in anything you do. There's risk in building in midtown. It's not our geotechnical role, or even our role, to tell the owner that. Particularly since we're not in the business of risk assessment. If we were a Wiggins, you know, it might be. But Wiggins really wasn't willing to tell 'em that either. ...

Part of the problem is how you pencil out human life. How do you put a human life on level plane with dollars and cents. That was, my impression that that was Wiggins' biggest problem and the reason he was fairly inconclusive was that there wasn't any way that he was able to manipulate that. Or even to figure out how many lives are we talking about.

Q: One observation made by an insurance representative is that we don't include human love and concern in the project development process. All we care about is profit until after the disaster. How would you respond to that?

A: That may be an insurance company's point of view. It's all dollars and cents to them, but it's not all dollars and cents to us cause we deal with these codebooks and we think day in and day out about the safety of the people in this building. A lot of what drives our design process is keeping people safe and getting them out of the building safely. We, as architects, think about those people and their safety all the time. So, don't put us in the same bag

with the insurance guys. ... they're much more in a spreadsheet world than we are.

Q: Is it tough to tell clients they can't do it?

A: Of course it is.

Q: Can it affect business?

A: Sure. Just because we don't have a lot of personal experience, it's pretty obvious to see that if you've got a developer that wants, is gonna do a building and you tell 'em you're not gonna do it, or he shouldn't do it, and he'll find somebody else. And it's a competitive world out there.

Q: Do you know how many faults affect Anchorage?

A: I couldn't tell you how many.

Q: How likely is it for a major earthquake to occur in your lifetime?

A: I guess I expect that there probably will be.

Q: How often do you think about earthquakes?

A: At work. But not too much besides that.

Q: In your daily life?

A: No. ... One of the problems with earthquakes is that they happen so rarely that it's gonna be very difficult for everyone to be prepared or continue to be prepared. They have problems with it in California even when they have earthquakes, they seem to be having one every two or three years. And up

here we're much more complacent, I think, because we really haven't had earthquakes ... since '64, haven't been adequate to really cause any damage or anything.

Q: How often do you think about earthquakes in your daily life apart from work?

A: Not daily. Maybe weekly. ... It has more to do with where I am and certainly occasionally I'll think, this could be a not so good place to be in an earthquake.

Q: How would you improve the risk management process?

A: I'd say, it works imperfectly. It's not an endorsement of the process necessarily, but I guess all I can say is that I'm very practical person and it certainly seems the forces at work and the way things work and just the nature of dealing with great numbers of people, a lot of different interests. While we don't have a perfect process, there's a lot of things that maybe, should've been done differently, but I don't have a vision of what to do to change.

(In a post interview conversation this architect expressed true concern that I acknowledge that the court had at one point decided to move to a different location. I contacted a court representative who has been involved in the entire process. That representative did not recall the court ever making a decision to move to another location. Other participants in this interview

process have made reference to a possible move. None of those participants indicated that the move decision was ever seriously pursued beyond the Wiggins study. He also wanted me to understand that he felt that the site-selection review process was not influenced by political pressure.)

Court Project Review Engineer

The tape for this interview was corrupted by background noise. As a result I have not included a full presentation of the engineer's viewpoints in this draft. I am presenting this summary from written notes:

This engineer was the project coordinator for the seismic review of the courthouse. He was originally contacted about the project by Wally Hickel. He said that Hickel called him and wanted to know how he felt about building in the downtown area. Hickel wanted to make sure he was objective and open to the possibility to build in that area.

One interesting fact is that this engineer opened the interview by making reference to an associate and friend (Mr. M.) who serves on the Geotechnical Commission. Mr. M. is identified in other interviews as having a prodevelopment approach to the evaluation of the slide areas, which appears to result in professional benefits for him.

The engineer challenged the basic assumption that the bluff land was high risk. I reviewed the many studies which referred to the high-risk

designation. He stated that he believes that high-hazard land (the slide areas) are not necessarily high-risk lands and that each site needs to be specifically evaluated. According to him, it is possible to construct on most of the bluff and slide land assuming you use appropriate design considerations. He explained that the earthquake stabilized some of the land that slid because basically there is nowhere else for that land to go. He sent me a recent paper that he has prepared which supports his views. The paper's findings are reviewed in Chapter 4.

He also pointed out that soils engineers and geologists have different time perspectives. Geologists think in terms of extended periods, recognizing that the earthquake will eventually come. Engineers think in terms of short timeframes and seek to solve the problems on specific sites for current use. Geologists say you should never build. Engineers seek to solve the problem in the current situation.

I questioned the possibility of land behind the old slide moving, resulting in further impact on the old slide areas. He pointed out that according to his calculations the risk of dying in an earthquake in high-hazard land in Anchorage is minimal and about comparable to dying in a car accident. He indicated that that is an acceptable risk. Based on these points he presents

the professional engineering viewpoint which supports reconstruction on the bluff and Turnagain slide areas.

Geotechnical Engineer on Geotechnical Commission

Q: Background.

A: Everybody has their own bias. I have my bias in that I'm a geotechnical engineer. That's what I'm looking at and that's what I look at. If you look at the property owners around there, their bias is keeping up their property values.

Q: You stated that you knew this thing was going to come.

A: Right. And one of the pressures on this project was the vocal property owners, the people that owned commercial property around the courthouse ... and, I think, brought pressure to bear on the decisionmaking process. Those were the participants.

Q: It seems like there are buildings on the bluff which are not geotechnically designed as well as the courthouse building will be. For example, the D&D Building.

A: ... It's because ... the owner of the property went to a contractor and said build me an x square foot building for this piece of land that is an office building. I suppose they negotiated a price and then the contractor hired all

the consultants he needed to design the building and essentially directed their work.

[The contractor's] concerns are different than the owner's concerns, are different than the municipality's concerns, are different than the general public's concern. So, the contractor led the design effort and set the design standards for that building. He met the minimum code standards in that building.

In fact, it's interesting, you can design a building, sort of optimize a design of a building, use the lightest possible structural members, to make the thing stand up and work. But, in so doing, the performance of the building is compromised. In that particular building, the interesting compromise is that, since they went to such a light and, therefore, inexpensive system, the floors are very bouncy in there. I know someone whose firm used to be in that building, but he said that they moved out of that building because when people would walk around the floors, the drafting people would have to raise their pens because it was so bouncy. It was perfectly safe, it's just bouncy.

Q: Will it perform as well in an 8 point quake as the courthouse?

A: There's a whole different set of reasons why it won't. The D&D Building was driven by other forces than the court building. The court building eventually was driven by, I think, public demand. Everybody got

involved--the owner, the designers, and the general public--because it was very controversial. ... Let me go all the way back to the beginning and bring you up to this point. In the beginning, the court hired Harding Lawson to do a geotechnical investigation. Gave them no parameters, just said go do an investigation, we want to build a building. So they did that. They went out and drilled some holes and they probably were asked to evaluate the stability of the bluff. And they did. And all they did was say according to our interpretation of the data, this site can fail in an earthquake. I've forgotten exactly how they couched it, but, it was likely that it would fail.

Q: Not a suitable site.

A: Their approach to engineering is sort of proactive, they say, if they feel something is not safe, they come out and say it. So that's what they did.

But there were no criteria for them to really make that decision. They made the decision based on their perception of the risk. They said based on our knowledge of the earthquake environment, the seismicity of the region, the soils at the site, we believe that this site can fail. I don't know that they said it would fail within 50 years or 100 years or 10,000 years, they just said it would fail. And that leaves decisionmakers sort of in the lurch because unless you say it's gonna fail in 10 years or it's gonna fail in 10,000 years, knowing those two

pieces of information may make the decision different. They didn't do that and nobody asked them to, basically ...

Then it started going through the commission. And as it went through the process and other consultants got on board, reviewed Harding Lawson, maybe did a little bit more investigation, they kept saying, yeah, there certainly is a possibility of ground failure at this site. It is not a stable site in the big picture. In order to get them off the dime, get everybody off the dime, well, the . . . commission suggested that they use . . . a set of criteria that said, I don't care if, what site it is in Anchorage or anywhere in the world for this particular building, these are acceptable levels of risk for ground failure. . .

Q: Was that the risk criteria established by surveying nearly 100 geotechnical experts done by the Geotechnical Commission and some State experts?

A: Right. [It was done] for the state office building. [They established] acceptable levels of risk. [The Geotechnical Commission] suggested that the court system then take those levels of risk and if that was acceptable to them, then all they have to do is have their consultants, whoever they want, verify that that site would not [exceed those levels of risk]. So Woodward-Clyde, then, did their analysis of the site and . . . Essentially what they then said is,

OK, Mr. Owner and the community, because the community said this is acceptable to us as a community. [You can do it] ...

Q: They are designing for four feet of ground failure.

A: Right. And so everybody said, yep, that's fine. The commission said that's fine, the community said that's fine. So then they just go out and test the ground and if the ground tests within those parameters, then it's acceptable. If it doesn't, then it's not acceptable. And that was the final sort of straw that got 'em off the dime. What the commission did was simply read the report and if the report said yes, it was acceptable, then the commission had to accept it. If it said no, it wasn't acceptable, then the commission wouldn't accept it. Neither would the owners. Process was absolutely correct and that's exactly what the commission wanted, you know, the general engineering community wants.

Q: But I thought you couldn't design for ground failure.

A: Let's put it this way. ... Buildings typically are not designed for ground failure. They are designed for ground shaking.

There are two physical phenomena that you must design for or against-- ground failure and ground shaking. And, engineers design for ground shaking all the time. That's our problem. But their basic assumption is the ground is gonna be there. When the ground leaves, 99 out of 100 engineers say, I

cannot design for that, I can't guarantee the building. But when you go into it saying we have to design for this building to survive given a certain amount of ground failure, whatever it might be, four feet, six inches, whatever. ... Then you can design for that, --

Q: At least address in design.

A: That's right. And that's what they did. And that's why they have this giant thick mat of a foundation rather than little individual combs. This thing did evolve. It came out in all the meetings. It basically was, and especially in Wiggins, his risk study, that's what he accounted for. It is because none of these buildings are built in a vacuum. They relate to everything around.

I think the beauty of the whole process of this building and if you do things using this process, is that everyone was involved in the decisionmaking process in some fashion or other. Everyone had their own agenda. That's perfectly valid. A property owner has as much sort of right to input if it affects his property as the structural engineer does, as the police department does, as the fire department does. All of those are, I believe, valid. And they were altered. The process was agreed to by everybody. Whether you believed the technical fine points of the information, that's a whole other topic, but the process was correct.

[I know there are geologists] who always take the position that you should not build structures in hazardous ground. ... What I would say is you sort of have to pick your side on this if you want to be completely dispassionate about it and absolutely open, then you have to listen to everybody. ... You cannot make risk zero in anything, in anything in life. So, at some point, you need to make a decision and the decision generally is made on what a particular person perceives as acceptable risk. But there are all sorts of players that certainly were involved. All of them had a different perception of risk. Because they all had different things to lose. I think to really use the process properly, you need that input. ... If you took any one of the players and simply allowed them to make the decision, very different things could've happened. The geologist, Wally Hickel, the contractor, the owner, the banker, each make different decisions, but when you get them all together and they all put in their two cents, then I think you get a rational decision made. Probably none of the players would have made that decision in that particular way, but they are all probably satisfied with the end. Or as satisfied as they can be. It's kind of a consensus building process. Wiggins made an important point, if you can get the community to decide on what level of risk is acceptable, then the decision process from that time on is almost made for you. Then you just go

do the science and you check to see whether your ground meets the acceptable level of risk. If it does, fine. If it doesn't, then you don't build... .

Q: How does a professional balance getting the job done against difficult calls concerning risk assessment?

A: Our professional personalities are different. I think, for example, that [local geologists] would approach a project with the project having to prove itself safe. I mean, [the geologists] would start off that it's unsafe, now you prove to me that it's safe. [There are engineers like Mr. M.], on the other hand, whose philosophy is if somebody wants to build something and I'm gonna be involved with it, we're gonna get it built, regardless. That kind of engineer, ... if he got a report that says something was OK, his philosophy is we've got a professional engineer who's competent say it's OK. My approach is I am a skeptic. I lean more toward [the exemplified geologist's] point of view. But I go into it, I hope, with eyes open. I look for the flaws or the defects. I think that's my job. In any project, I don't look for the good stuff. I sort of assume that the good stuff works. What I want to do is find the problem areas and solve those problems. I want to make sure that when I'm finished with a project, that I have ferreted out all the problem areas and resolved them. And that's my job. Otherwise, they don't need me. They just go build a normal building.

... The engineering community is sort of made up with this big spectrum of philosophies to engineering. My philosophy regarding the clients is, first of all, I am a licensed professional. ... If you start playing games and knowingly show someone maybe how to beat the system and get around doing something on an unsafe piece of ground simply because you have the wherewithal to manipulate the numbers or show that the numbers will work, that sort of thing, and really sort of lie to people, eventually you're gonna get burned. Professionally and economically you're gonna get burned. So if I'm gonna get burned, I would rather do it being up front and honest. . . .

I'll give you my perception of Shah and his dealing with this. ... My perception is that Shah is the big expert from the university who has been working in the fields 20, 30 years. Well known across the nation. Probably internationally. He's a seismic expert. And I think he came up here with a bit of an attitude such that he's gonna show the local people the truth in this matter. By the time he came on board, there were volumes and volumes saying don't build, don't build, don't build, this is a problem, this is a problem, this is a problem. And then I think sort of his ego came on and said well I'll take care of the problem. And so that's what he did.

He took care of the problem for the courts. He showed them, in fact, I said most good engineers can come up with any conclusion you want. They

can manipulate the numbers, ignore some numbers, they can rationalize any conclusion you want. And I think, just my personal perception, that's what he did. And then that's when he got nailed by all the local people. We have a real advantage over somebody from the outside. I don't care how much their expertise is, we know the area. He just missed things that he didn't know about.

... And he just flat missed things. ... See, Shah just came in and said you're all full of hooey, there is no potential for ground failure there any more than anywhere else. He was just flat wrong. ... What Woodward-Clyde's solution was, I guess, was they acquiesced that there was potential for ground failure, but it was so slim that it met the acceptable levels of risk. I have a great deal of respect for Woodward-Clyde, they do premiere work and they certainly have in the past, I know Mr. E, and he's a world-renowned earthquake engineer, geotechnical engineer. ...

Q: It seems that Woodward-Clyde had the skill to maintain professional respect as well as maintain a strong relationship with the potential client.

A: They're good business people. That's kind of the difference. They are excellent in that fashion. But, see, some folk [geologists] won't get contracts cause they're too controversial. And there are others like [Mr. M.] who get all

they want because they give 'em the answer they want. ... You absolutely need [the geologist type of people]. They are the conscience in the community. ...

... Well, the professionals that deal with this,... besides having our professional ethics that we should follow, we have a lot of liability out there. If that building falls down, the very first people they're gonna come to are the designers. The owner's not gonna have a problem. ... When you had the first Harding Lawson report, they're looking out for their liability too. Why should they say to the court building knowingly that this site can fail? ... That's the business part of engineering. Trust me. People will sue engineers at the drop of a hat for bizarre reasons. ...

I'm sure there were times, and I have clients, current clients, that say I'll indemnify you, I won't sue you, I just want to build my building here, but the courts will say, that's a banker, he doesn't know anything about dirt. You're the expert, and you let him do it. And so you get sued. I don't care what kind of indemnity you have, the court building said the same thing. And they know better. They're dumb lawyers. They don't know anything about the ground. ...

But one of the things that I certainly would give the court system credit for is they just kept throwing money at this thing, they would do whatever the commission said or whatever anybody that had control over the investigations and the decision. They would do whatever they said no matter what it cost.

And they spent a million dollars on this thing which is just absurd, an absurd amount of money to afford a project of this size, to spend in the ground. And they did. They didn't balk at that. They just kept doing it until finally the answer was that they could do it.

MICRO INTERVIEWS: THE PUBLIC TRUST

Jury Person

Q: I understand you have served on the jury recently, is that correct?

A: Right. That's a three-month commitment. Week on, two weeks off.

Q: So, on some days you spent more than 8 hours in the courthouse, which is located on high-risk land concerning earthquakes. Did that come to mind when you attended jury duty?

A: The issue of earthquakes didn't enter my mind as I was called down there to work and to serve. It didn't enter my mind when I went down there. But the issue came up in the Grand Jury Room because there's a crack in the wall. And, the clerk who was on that day made a comment and said, look at that crack. We'd recently had an earthquake, so we were thinking about it. She made the comment, "I wonder if that crack grows every time we have an earthquake?" And we started talking about the '64 earthquake. We started

talking about how the building had stood, ... and just was it a safe place during an earthquake? Did we think it would be a real safe spot to be? ...

Q: Have you followed, at all, the new courthouse construction?

A: Well, it's actually been interesting, and we have commented on that because when you go every day for a week, and then you don't go for two weeks, it's like not seeing your children for a month or two. It grows and you can really see the progress that's been made.

Q: Do you know anything about the '64 earthquake in terms of where the slide areas were?

A: Yes. And I laugh because when we bought our house in Turnagain, we are right next to the slide area. I know it affects our insurance rates as far as earthquake insurance, so.

Q: How likely do you think it is for Anchorage to have another big earthquake?

A: I think there's probably a good chance that we'll have another strong earthquake.

Q: In 10 years, 15 years, 100 years?

A: I would say 100 years, and this is in part because this is what I want to believe, I don't think it'll happen next week.

Q: How did you process purchasing a home in Turnagain?

A: We knew. And we'd both seen pictures of the 'quake. We knew and had talked to people who lived on our street, half of our street was condemned after the 'quake. I have friends who have grown up here whose families lost their houses because it was condemned but they still had to pay on it and they had nowhere to live and I know too from looking at the maps, because we did look at the maps, that we're on the edge of one fault line. And, so we processed it all through by the fact that we really do love that area. It seemed like it was somewhat into the safety zone as much as geographical surveys can show you that. And so I felt a little comfortable about it that way.

Q: You mean, because you're how far back from the area that fell?

A: We're four blocks. And we still see the evidence of it in that my husband has a favorite hike he likes to do that goes off the coastal trail and when you hike off of the coastal trail, there's a spot where you can still see foundations that are left over from the quake and we still comment on it because there's been a lot of growth and building along, really very close to the coastal trail, which is, to us, that's foolish, but we're not foolish. If that makes any sense. It's like we've drawn a line and we've said that side of the line is foolish and this side is not.

Q: How do you personally put the earthquake information together?

A: I guess too I trust.

Q: Who do you trust?

A: I trust that, because of the experience with the '64 earthquake that building inspectors and builders in Anchorage are super sensitive to earthquake. And I trust that any new buildings that's happened since '64 is built to incredibly strong specifications. And then I trust as well, we got a very loony as-built when we bought our house and it showed us on the wrong street. And so we had to have the as-built changed. And, the as-built also showed, in addition to the fact that our house was on the wrong street, that it had been built after the earthquake. But neighbors have told us that our house was there before the earthquake. So, we've never been quite sure exactly, within three years, as far as when our house was built. So, that's another element of trust. I do have this odd trust that my house was there before the earthquake, and therefore it can withstand a major earthquake. So it's almost like it's been tempered. Not that it's been weakened, but it's been tempered because it rode out one.

Q: Do you have any idea how many faults are near Anchorage?

A: No, I don't. I know there's a major fault, but I don't know about how many more there are beyond that.

Q: Assume there is an earthquake and the courthouse falls. Whose responsibility?

A: I do assume that the city is responsible. But, if a city sets certain standards and certain codes and issues permits based upon the codes, I do have the expectation that they're designed to withstand. Too, I think you can't predict, and therefore prepare, for every event that's going to happen. You do your best.

Q: If you were an elected official or decisionmaker, and you were told a site had a potential for ground failure, and you couldn't construct safely on it, how would you vote?

A: It would be so hard, because I really love downtown Anchorage. I do, I enjoy being down there and I've been glad to be back down. So, what you say, too, about thinking about should the courthouse be there or should it, say, be moved to midtown, which is very accessible...

Q: Or back three blocks

A: Except there isn't really land back three blocks.

Q: Yes there is. There's parking lots there.

A: Oh, that's right. We had an empty parking lot kitty-corner from the health building. How would I vote? I probably would've voted against it and said that we needed, I mean especially if there was land within three blocks.

Q: As a juror, if you knew that you were in a building that had potential for ground failure in a setting that has a potential for earthquake, do you think it

would affect your decision to serve? Would you consider not wanting to go there?

A: Of course. I think that you should understand that when they pulled the 75 names for grand jury, probably at least 40-50 of those people stood up to go stand in front of the judge and say, I can't do it. And, one person was granted the ability to come at a different time. So that everybody else was required to serve. I don't think many people are predisposed to wanting to be there anyway.

Q: What information would it take for you not to be willing to go?

A: I guess if I received information that was backed up by studies that showed that it really was unsafe and that it was a very dangerous place to be and then I went in and firsthand saw that it appeared to be, and I guess when I say it appeared to be a dangerous place, even going into the grand jury room I think where are the exits.

Q: In the room with the crack. What do you think makes it OK for you to go back?

A: I have this goofy government trust that it's fine, that it's OK. I probably never in a past life worked in a shirt factory in Chicago where they locked the doors. I have this goofy trust that it's gonna be OK, that it can't happen, and that it's taken care of and people thought about it or it rode out the last one

and I'm safe. I mean I don't think about fires in buildings and, I mean, sometimes I think oh this is an unsafe place, sometimes I think what would I do and I'll bug my husband and say OK what if there's an earthquake and we're both at work and the kids are both, one's at school, one's at day care. Who gets who and how do we do it?

Q: Do you think about it very often?

A: I think about it in the spring and the fall when the seasons change because that, to me, seems like a dangerous time. Because of temperature changes.

Q: How do you balance your daily life activities with your knowledge of risk?

A: Serious denial. I look at the courthouse going up and I think, alright, it looks from the steel structure like it might be a nice looking building. And I get so excited about a nice looking building in Anchorage that I forget that the land is probably crummy underneath it. And just kinda like try to go on my way but keep conscious of it. I don't know, too, if it's cause I grew up with, I mean, we had a basement that was a fallout shelter that was stocked with canned goods and water so that when the bomb was dropped on Chicago we could all go in the basement and live for five weeks. So, it's almost, I don't

know if maybe we've had too many constant reminders of imminent doom that it's hard to say that it's gonna happen.

Judge

Q: How long have you worked in the courthouse?

A: Three (3) years.

Q: How many hours a day?

A: From 8:00 to 4:30 basically, five (5) days a week. And oftentimes it's until 5:00.

Q: How often do you think about an earthquake, in general?

A: Not that often. I figure, I know I'm living in Anchorage, Alaska, which I know is on the edge of a quake and that it's a reasonable likelihood that it's gonna happen again, and I know that we have them every so often.

Q: When would you expect a moderate earthquake?

A: I'd say easily in the next five (5) years. By moderate, you mean something in the six (6) range?

Q: Yes. How about a major earthquake--an 8 or a 9?

A: I don't think it's too likely, but I think it is a high enough likelihood that it oughta be a part of the design thinking in building or engineering. Maybe the next 25 or 50 years, or something like that.

Q: In terms of working at the courthouse, how often do you think of those issues?

A: Well, I know that whenever we talk about the courthouse, the district court building, where I work, as a structure, a number of people point out that studies have said that it wouldn't survive another earthquake of the same kind of magnitude as the one we had, the Good Friday earthquake. And I know from just looking around the building, I see some major cracks in some of the walls in some people's offices. So, when I think about it, which isn't all that often, but whenever I do think about it, it comes to mind. So, I guess, maybe once or twice a month, something like that, or maybe every two weeks, maybe once a week, something like that.

Q: Do you feel comfortable working there despite it?

A: A little tentative, a little bit uncomfortable. Yeah.

Q: What would it take to make you choose not to work there?

A: I guess I figure that the likelihood of another major quake while I'm working is small enough that it's a risk that I'm willing to take until they do get a new courthouse.

Q: And you have more confidence in the next structure?

A: Right.

Q: Are there any buildings in town you don't go in because of earthquake danger?

A: No.

Q: Do you think about it when you're in certain buildings?

A: Yes. The ones that I'm in. The one that I'm in more than any other building, not only because I work there, but because I'm aware that it did survive the earthquake, but I'm also aware that it's been damaged. I knew that before I went to work in the courthouse.

Q: What building are you in?

A: I'm in, I think actually it's called the Calamarise Building. Before it's the District Court Building, it's 941 West Fourth Avenue, that's the one that I'm in. Low, two- or three-story building.

Q: What do you think about the choice of the current site for the courthouse?

A: I know it's very close to where there were major damage previously. I know that probably it wasn't the best place to build it, because it's close to the slopes upon which the previous building was sitting and it's part of the Bootlegger's Clay foundation problem, I suppose.

Q: How difficult would it have been to move that site? Logistics.

A: I don't think it would make any difference whatsoever in terms of being a judge.

Q: How about in terms of processing people, etc.? Proximity?

A: I don't know. The one building that's going to stay, which is I believe the Boney Building, 303 K Street, is gonna have some of the facilities that they're gonna use like, I believe the Law Library is still gonna stay in the Boney Building and I believe the Supreme Court, which is on the fifth floor of the Boney Building will stay there. And, some of the administrative offices will stay also in the Boney Building. It would be very convenient to have the Law Library close to where the other courts are, very close. A number of the other administrative offices, quite helpful, for instance, I don't do much with traffic tickets, but I have. There's an administrative office called ASAP, it's on the third floor of the building I'm in and it's really helpful to just be able to go to that office on a semi-regular basis, once or twice a month or three times a month, just to walk over there, take a file, and talk to people and say what's going on in this case. Very convenient. Probably not the greatest design requirements, but it's still a very convenient factor to be able to do that.

Q: Did you follow the decision associated with the courthouse addition?

A: In a very low way. I've been a user of the courthouse since I was in private practice in '79 and so I knew that there were design problems--or not

design, but structural problems--for the district court building ever since I began using it. And, I knew, from time to time that they were talking about replacing it on a new, I think in the mid-80s they were doing drilling and kind of taking some core samples. I was aware of that, so I knew that there was some consideration of the process, but other than just being aware that it was ongoing, I had very very little involvement.

Q: Did you know how many engineering studies were done?

A: Not at all.

Q: Do you have any idea what the study says?

A: None.

Q: How confident are you in the review process?

A: Medium. I suppose, medium.

Q: Why medium? What do you think the influences and criteria were?

A: I would guess that there was some interest in maintaining the downtown as a viable commercial area. And the court sometimes provides a nucleus for some of that. Now, there was an existing building there and I guess some of the design criteria would have been to use, as much as possible, the existing building that they thought would stay, that is the Boney Building. In terms of the first, making it viable for downtown, that's a reasonable criteria. Making, you know, the use of, being close to the other existing building, I think that's a

very good criterion. Overall, I don't know what else was used in the way of thinking or criteria for it. And, I have reasonable confidence that people who are doing the analysis had an awareness of the structural problems from the other buildings and that I have hope that they would be aware of that in thinking.

Q: What information would it take for you to make a decision that you did not want to go to that office every day?

A: If I found out that, what I considered to be a fairly high likelihood of earthquake, level of say low 6s, was gonna make this building very unsafe to be in, then I would say we reconsider what's going on.

Q: Have other employees talked to you about the new building?

A: A couple of judges I work with have been on the committee that's supposed to look at the design of the courthouse. Not in terms of structural, but in terms of need. And, they, whenever we talk about how things are going, they always mention how unsafe our current building is. So, we're aware that, hopefully, we're gonna get out of the current unsafe building, you know.

Q: How much of an impact has the surrounding legal community had on the relocation?

A: I suppose some. But, I wouldn't say that it's truly major. Because law offices are just basically offices that, there, you know, they have files and they

have books and they have computers for word processing. And they're pretty mobile. Wherever there's a good office, they'll move in. As a matter of fact, I would guess that many of the people who have offices downtown would just as soon they had 'em someplace where there was a little bit better parking for people anyway.

Q: What do you think about this site? The best?

A: It is right at the edge, as I understand it, of where there were major problems from other, the previous earthquake, major earthquake. And, so, and I would imagine that there could be any number of sites a few blocks away from the current location to midtown for the actual, for another courthouse.

Q: Why do you think those weren't chosen?

A: It may be a question of just plain, one is the factor that there is an existing building and it's workable. I guess it's, and I really don't know, but it's because they didn't really want to get rid of an existing pretty good building and to make a major move. I think it may be somewhat economic. In other words, I think they could get, they felt they could get enough money to build a building that takes care of certain needs which is a better set of trial courts without necessarily getting all the money they would need to take care of both trial courts and all the administration that goes with appeals and other associated ...

Q: What do you think the liability would be if there was a catastrophic earthquake and people were killed? Is it an issue?

A: I suppose it always is in design. I think it's a question of is there enough, I mean, were the design criteria economically, you know, it's a balancing, I suppose. Continuum. Whether there was enough design criteria to deal with what they foresaw as a possible problem and what was done was within reasonable range. I think the liability is probably pretty small.

Q: In terms of this process, if that building were to fail, who do you see as responsible for it?

A: I think it would be the people who make the structural decisions.

Q: You mean engineering?

A: No no no no. They tell what they see. They call it, you know, if it's good or bad. People who make the decisions to build--whoever decided to build this; I don't know who decided.

Q: Who do you think decided to build it?

A: I'd guess it would be the state court's administration. On the other hand, though, as I understand it as well, state court is a sort of like a tenant from the DOTPF--Department of Transportation and Public Facilities--they essentially manage the facilities. So, I think it'd have to be a decision in combination between state court as the, sort of, user agency, but also the

Department of Transportation and Public Facilities as the, sort of, builder/operator of the facilities. Cause I know, if we want to do something of any significant nature, we have to get DOTPF to approve it.

Q: Is there anything else I need to know?

A: I think it's an expectation of most of the people I work with that this structure that we're going to go into is far safer than the one that we're in now.

And, you know, I hope it is.

Citizen#1

Q: Have you been in the courthouse in the last four (4) years?

A: I have. Twice.

Q: To do what?

A: Four years ago for a divorce. Last week for a, to contest a traffic ticket.

Q: When you were in there, were you concerned about seismic issues at all?

A: No.

Q: Do you ever go downtown and worry about seismic issues?

A: There have been times when I've been in the higher skysrise buildings, like Enserch or Arco building, and I've wondered what would it be like to be in this building if there was an earthquake.

Q: Have you ever altered your patterns and avoided buildings because of earthquake issues.

A: No.

Q: Do you eat at Simon & Seafort's which as you know is located right on the bluff?

A: Yes.

Q: When you're in there, does earthquake risk cross your mind?

A: I enjoy the places to eat. They're really good food, so it's kind of a bargain that you do that you go there and really don't consider, I don't consider earthquakes at that point.

Q: How likely is it for us to have a moderate earthquake?

A: Probably within the next 10 years.

Q: How about a big earthquake?

A: I do think it's very likely, and probably within 50 years.

Q: When we're building buildings for a community, what would you say the life span of a building should be?

A: If I was building buildings, I would want them to be a permanent structure. One that as it wore down, it could be renovated and maintained and kept. I know that that's not how buildings are built nowadays and I'm not sure what the life expectancy is, but for the amount of money that we put into them, I would think that they should last between 50 and 75 years.

Q: In your daily life, how often do you think about earthquakes?

A: Rarely. I live over here, close to the mountains, I have a sense of security that I'm not close to the Arm where I feel like the chances of an earthquake damage or disruption would be higher.

Q: In terms of the courthouse, you know they're building a new courthouse?

A: No.

Q: You haven't followed the evaluation process, or been engaged in what is going on?

A: No.

Q: What would be your expectations in terms of this courthouse and its chosen site?

A: What I would like to see is some kind of structure that, and I've heard that through another building were built, and I'm not sure if I heard that it was on rollers or what, but it's something that would give along with the movement of the ground. And that it not be a skysrise, but more lower.

Q: [Explained engineering studies, ground failure, courthouse site.] What information would it take for you, as a citizen, not to enter this building?

A: Well, when you're summoned by a court, it would be very difficult to say you're not gonna appear due to the fact that you feel like the building is not safe. You'd have to go with an engineer and that's quite a feat in itself.

Because a whole town is situated there on the fault line, it's kind of, I feel like I'm in a sense of denial that nothing's ever gonna happen. And because there's not very much open land available in the rest of the community to build outside this downtown area, it's like our hands are tied and we don't have any choices. We're stuck with what is available. At this time in my life, I don't think that there would be, unless there was a, the building was condemned, would I not enter.

Q: You would rely on the community's decision of safety?

A: Right.

Q: If that building fell down during an earthquake, who would you hold responsible?

A: I wouldn't hold it responsible for anybody mainly because it's more of an act of God when there's an earthquake.

Q: Even if they knew when they built it that it had potential for ground failure?

A: It just seems so overwhelming because it's not just one area of town, it would be the whole town that you would have to consider unsafe. To not build, or to move, all those places.

Q: What if there's vacant land three blocks back from the bluff and it's been a conscious decision to locate there?

A: Well, I would hope that the city was getting professional consultation from engineers or from earthquake experts, especially if they're gonna put that sizeable amount of investment into a building. And to highly consider those recommendations.

Q: And you basically have confidence in that system?

A: Yeah. I would think that the city would take that responsibility on.

Q: How confident are you that the city's done that?

A: Not very. Mainly because of all the cutbacks that the city has done.

Just in the areas of government that I have been involved in, I feel like a lot of "fringe-type things" and consultations and all outside of the city are probably down to a minimum. If it's not available, that expert is not available within the city, then it's probably not utilized.

Q: Is there anything else I need to know about life in a seismically active city?

A: I think that most of the time I deny that I'm in an earthquake, seismic area, mainly because the length of time that I've been here we've had minor rumbles and shakes. Although I have seen photographs and yearly reminders that it did occur in '64. You know, I've got an earthquake safety bulletin on the back of my bathroom that was there before I bought the house and I've maintained, you know, I've kept it there, but yet I don't have the jugs of water.

I know one friend that does. But, I also know that it's a realistic opportunity that may occur. In terms of my life, when I put it in perspective with everything else, I mean, I could be in a car accident or, I mean, there's a lot of things that could happen and I just can't live my life in fear of that. If I'm gonna be downtown when this earthquake hits, and how I'm always going downtown. I'm not gonna not do something because of a chance because chances of other things are just as high.

Citizen #2

Q: How often do you use the courthouse?

A: About twice a year.

Q: Do you ever think about earthquake risk when you are in the bluff area?

A: I think it crosses my mind subconsciously. I don't dwell on it.

Q: Have you followed the review process for the new courthouse?

A: No. I don't remember hearing about it.

Q: How many faults are there in the Anchorage area?

A: Maybe two. I am not sure.

Q: How often do you think about earthquakes?

A: Every once in a while. When we have one. I just do not dwell on them.

Sometimes I think about them in a subconscious way. But when it comes to mind I just don't think about it. What good does it do to dwell on it?

Q: How likely is another major earthquake in the Anchorage area?

A: Oh, it is going to happen, it's really likely. ...

Q: When do you think it could happen?

A: It's been 30 years since the last big one. I would say we are definitely due for another significant quake in the next 10 years.

Q: Do you change any patterns or have any pattern in your daily life which are related to seismic issues?

A: No, not really. I do check for exits when I go into a building. And there are some buildings right on the bluff that I avoid. ...

Q: What do you think about the high-rise buildings on the bluff?

A: I know there have been a lot of studies that say we shouldn't have built there. Well, I mean, all you have to do is to look at that area--with a little common sense. ... the crack was right there and now we have high-rise buildings right on it!

Q: Who is responsible for the seismic safety of the city?

A: The municipality--the city government.

Q: What do you think you can do to make the city more seismically safe?

A: There's not much I can do. No one is going to listen to what I have to say. They are going to build where they are going to build. That's just how power and this city works. They do what's on their own agenda and don't care

about what the rest of the people think. There are studies that tell them things that they just don't want to listen to. I don't think they care. There is nothing I can do.

Q: Who is the "they" you are talking about?

A: The ones that build, the ones that develop, the big bucks. And the municipality, too.

Q: What would you do to make the system safer?

A: I think we should have a citizen review board, made up of just plain citizens, not experts or representatives of special interest--but just plain people. You could advertise it in the paper and people could volunteer and then jut draw them out of a hat.

Q: Do you think they would see things differently?

A: The experts might find out what the citizens are concerned about and what their concept of safety is. I think it would be different. I think it would be safer. Safer for people, not big money.

Informal Interviews With Two Courthouse Employees

An informal interview occurred as I was gathering data for the record review portion of this study. Both employees commented on the fact that their office is in the D&D Building, which was located in a graben, and they felt very unsafe in the building. They also commented that the district court

building had cracks in the walls. They indicated that the way they handled working in these buildings was to "just not think about it." They both view the new courthouse as safe. Although one employee who was here during the earthquake stated that "if the ground fails like it did in the 1964 quake we'll be goners. I have to work so I just put it out of my mind. But when I do think about it I can't believe we have built all these buildings here."

CHAPTER 7

ANALYSIS AND CONCLUSION

This chapter presents a summary of findings which focus on information presented in Chapter 4, Review of the Record, and Chapter 6, Interview Perspectives. It also examines the research findings in relation to the literature. It evaluates the hypothesis in relation to the research findings and it identifies the limitations of the research.

SUMMARY OF FINDINGS

Review of the Record

The review of the record indicates that the courthouse site is located near two of the bluffs in Anchorage which have been defined as high risk and subject to potential ground failure in earthquakes. Anchorage is one of the most seismically active regions in the world. There are three earthquake zones associated with potential plate movement that could seemingly effect the city. These faults can generate great quakes that last several minutes and cause very strong shaking. There are also three shallow coastal seismic sources. These faults are conservatively estimated to produce earthquakes of magnitude 7.5.

Structural engineers generally agree that a building cannot be designed to withstand ground failure. A recent study challenges the term high risk and submits that the bluffs should be considered high hazard. It assumes risk can be overcome by appropriate design. Seismologists and geologists agree that Anchorage is vulnerable to an extremely high level of earthquake risk.

Walter Hickel led the momentum to reconstruct in the area of high risk after the earthquake. He began the construction of a high-rise hotel within just 60 feet of a graben. His investment was followed by investment from the wealthiest families in Anchorage. The warning of the geotechnical community was ignored.

The court needed to expand to meet increased case load. The existing court facility was already located in high-risk land. In 1982, the court purchased adjacent land for the construction of a new courthouse. The decision was supported by the local infrastructure of land ownership associated with court related services.

An ongoing flow of information regarding the implication of potential earthquake has not shaken investor confidence in the area. The information has consistently indicated that specific bluff areas are susceptible to ground failure. Three separate engineering studies, the state seismic experts, and the Geotechnical Review Advisory Commission indicated that the courthouse

addition site has significant potential for ground failure due to its site-specific geology and its location in relation to two bluffs. A liability expert recommended not choosing the site for the addition.

The court hired another expert to do a fourth analysis. That firm excluded the consideration of one of the bluffs from its evaluation of the site. The expert then established a conservative reoccurrence factor for another major earthquake and compared the site's risk level to another site associated with a project which had been deemed acceptable. The firm concluded the courthouse site was suitable. The conclusion was questioned by respected geotechnical experts in the state. The Geotechnical Commission ultimately accepted the methodology of the fourth expert analysis and focused its energy on seismic building design issues. The Planning Commission approved a special use permit for the courthouse subject to seismic design consideration. The architect who was hired to construct the project prepared a detailed analysis of the site and developed design considerations which address the potential for 4-foot ground displacement under the building. The Geotechnical Commission accepted the design criteria.

Interview Findings

Each level of interviews has three major focus areas identified in the interview process. These help define the intellectual construct of each level.

From level to level the focus areas have some similarities. The first focus area deals with power, the second addresses interpretation of information, and the third involves responsibility and risk denial. A review of the focus areas are:

Macro Construct Elements.

1. Personal mission and money, power and politics as it impacts the decision process.
2. Mistrust of experts who do not support the choice to reconstruct on high-risk land and a pseudo-scientific explanation of earthquake risk.
3. Transference of decision responsibility and risk denial and dissociation.

Meso Construct Elements.

1. Money, power, politics and its impact in the decision process.
2. Decision process relationship to professionalism and varied perceptions of court needs, site safety, and liability.
3. Transference of decision responsibility and professional acknowledgment and personal denial of earthquake risk.

Micro Construct Elements.

1. Powerlessness and faith in the system.
2. Acknowledgment and acceptance of community earthquake risk.
3. Transference of responsibility to entities beyond individual control and denial or dissociation from earthquake risk in daily life.

Linkages

Important linkages were identified at each research level. These linkages help define the motivation and influences on the decision process. They also contribute to the underlying individual and social constructs which influence the decision outcome.

Macro Level Linkages. Participants at the macro level had direct impact on the meso level participants. Their impact focused on retaining the courthouse and related court infrastructure downtown and encouraging continued development in the slide bluff areas. Downtown business interests and prominent families kept track of the decision process and work to insure that the outcome would result in a downtown courthouse.

Hickel has played an important role in the entire redevelopment and courthouse review process. His original decision to construct next to the graben soon after the earthquake clearly influenced the development which followed. He was also instrumental in the courthouse decision. He was in regular contact with the court administration, insuring that his interests were pursued, and he reviewed the attitudes of the project coordinator who prepared the final seismic evaluation for the courthouse prior to the engineering firm being hired. As governor he insured the funds necessary to construct the building.

The bank president interviewed (whose father was also a bank president and mayor soon after the earthquake) provided the economic incentive necessary for redevelopment on the bluff. That economic insensitivity fueled the professional reevaluation of potential bluff development. As mayor and banker immediately after the earthquake his father insured protection of existing economic interests. That momentum was sustained over time by the bank's willingness and ability to finance construction on the bluff without earthquake insurance. Once the buildings were there the insurance followed. The bank president who was interviewed is currently providing that same momentum to the reconstruction of the Turnagain slide area. By choosing to locate his home there he brings the financial strength and political clout of the bank to the pursuit of reconstruction.

The city council person, legislator, and mayor protected downtown interests partly out of the need to maintain the support of downtown constituencies and partly out of the commitment to specific assumptions about appropriate community planning practices, i.e., concentrating government agencies in a single downtown core area, revitalizing downtown areas, and reducing urban sprawl. This assumption was supported by the local planning process and federal guidelines. These politicians deferred the issue of safety to

the experts at the meso level or to some other government agency apart from themselves.

The financiers and developers used the professional infrastructure to pursue profit in the existing setting. They relied on professional engineers, architects, and the insurance system to protect their profit and reduce their liability. They deferred responsibility of risk assessment to the government and insurance review process.

Meso Level Linkages. At the meso level most participants directly transferred responsibility for the decision to the macro level. The insurance representative's role is simply to provide the service. The engineer is simply to provide the information, the architect is simply to build within the constraints of acceptable risk as defined by the decision makers.

The engineering community is somewhat divided in terms of the suitability of the bluff lands for reconstruction. Most engineers see it as a high-risk site which is subject to ground failure. The engineer who was the strongest advocate for seeing the land as suitable for construction was also a close associate of the geotechnical engineer on the Geotechnical Review Board who was referred to by other professionals as saying "yes" to anything that had an engineer stamped on it.

There is an undeniable relationship between receiving contracts and maintaining good relationships with the macro level participants. The geologist is so alienated from the macro level that the professional input the geologist provides is ignored and ineffective. The Planning Commission member negotiated continually between the interests of the meso level professional reservations about infrastructure and the macro level desire to move full speed ahead.

This group generally saw a major earthquake as imminent. They tended to think about earthquakes often due to their work. Yet they did not think about earthquakes in their daily life.

Micro Level Linkages. The citizens and court users abdicated their power to both the meso level and the macro level. They saw the existing courthouse addition as an unsafe place and anticipated that the new one will be safer. They expressed confidence in the meso level review system, indicating that they felt that the court, the city, and the professionals worked together to insure a safe outcome. Although none of them were knowledgeable about the geotechnical review or the courthouse decision process, they also indicated that macro level power interests were a dominant determinant in the decision outcome. They did not see themselves as having direct influence in the macro

power structure that makes the decision. The need to maintain jobs and daily life commitments overpowered their concerns regarding earthquakes.

This group acknowledged the potential for a major earthquake in the relatively near future. However, they openly expressed their ability to deny or dissociate from the fact that one might occur in their daily life.

RELATIONSHIP TO THE LITERATURE

The combined examination of the review of the record, interview elements and linkages define constructs associated with each level. These definitions are limited in that there are simplifications drawn from a large body of complex interrelated perceptions, facts, and experiences. These constructs are supported by decision approaches and individuals and group behaviors. We will now examine the construct in relation to the literature.

Macro Level

The macro level construct is driven by profit, power, and the fact that there was an existing urban infrastructure already located on high-risk land. Decisions are evaluated in terms of sustaining the existing power structure. There is romantic frontier mentality which presses for expansion and seeks to preserve individual rights. There is a clear commitment to the preservation of

the economic health of downtown Anchorage. This level uses whatever information is compatible with the general goal of sustained profit and power.

The macro level relies on a combination of decision approaches, including mixed scanning and satisficing. It uses selective input based on rules of thumb which are dominated by the intent to maintain profit and power. It does not use a vigilant process to evaluate decisions. The decision review process is determined by the commitment to the agreed upon direction of the group. It therefore seeks information to insure that decisions result in economic or political protection of macro level self-interest.

The group demonstrates defensive avoidance in that it is selective in terms of what information it chooses to incorporate into its decision process. Its main coping tool is bolstering which results in oversimplification, distortion, evasion, and the omitting of major facts related to their specific goals.

This group displays two approaches to responsibility. The first is one of enlightened leadership. Individuals see themselves as having special insight and understandings about what is really important and good for the community. Cognitive dissonance is used to exaggerate the positive aspect of their viewpoints and ignore the negative. Bolstering is also used in many cases to redefine the scientific explanation for their decision.

The second approach passes the responsibility on to the existing system. The groups see themselves as playing by the agreed upon rules. They therefore transferred responsibility to master plans, insurance systems, and technical review systems. This group displays group think. They basically discount warnings which might lead to reconsidering their assumption about what is good. They ignore the ethical or moral consequences of their decision.

Dissenters are perceived as against the group. Neither approach perceived earthquake risk as a salient issue in their day-to-day life or in their investment and policy decisions. They express a sense of control and confidence that their decision and investments are safe from earthquake risk, which can be seen as dissociative from the actual situation.

Meso Level

The meso level construct is driven by a sense that they are professionals doing their best in an imperfect world. A world is dominated by politics, wealth, power and an Alaskan frontier mentality based on opportunism and independence. This group values rational thinking and believes that it presents its views and opinions in that manner. There is a commitment to public safety. There is a desire to believe that the decision system outcome will result in genuine safety for the public. Yet, there is also a willingness to not participate in the final definition of what safety means. There is a politeness

between professions. They recognize that their effectiveness is dependent on maintaining a relationship with the client at the macro level.

Suboptimizing is the dominant decision approach on the meso level. Decisions may be optimal in relation to one objective, but suboptimal when evaluated from another objective. Satisfying one objective may mean losing other objectives, because the decisions are multidimensional. This level did seek a vigilant decision process. They canvassed alternatives, they weighed costs, they sought out new information. Yet the decision outcome was dominated by stress from the pressure of the macro level goals. In the face of that stress, this decision level used a variety of coping patterns.

Some participants engaged in defensive avoidance by being selective about what was perceived as dangerous and focused their attention elsewhere. This resulted in a redefinition of the problem to be solved. Buck passing was the most significant tool used in the process of coping with the decision stress. They relied on the hierarchy of the decision process as an opportunity to transfer responsibility. Some displayed cognitive dissonance by exaggerated favorable consequences and viewing the system as working even though the result may be flawed. Expectancy theory can also be seen in this group. Some individuals made choices to be connected with or took some action based on the relative personal gains.

There was also a group think quality to this level. Individuals who disagreed with the polite direction of the professional agreements were discounted in terms of their effectiveness. Individual and firm were viewed as non-players when they directly disagreed with the group. The politeness between professional individuals could be seen as shared illusion of unanimity, partly resulting from self-censorship and augmented by the false assumption that silence implies correct consent.

The group clearly recognized the risk of another major earthquake. Yet that risk was presented as a "factor" to be considered, which is perceptually different than understanding it as an actual fact. That "factor" perception allows for minimizing the loss in relation to other gains and it builds the vocabulary for dissociative analyses by allowing the factor to weigh equally against many other less important factors.

Individuals in this group displayed dissociative behavior which is supported by the fact that they did not see the issue of earthquakes as salient in their daily life. They basically agree that although it related as an important issue at work, earthquakes were not a conscious issue in their daily life.

Micro Level

The micro level construct is dominated by abdication of power. They see their safety in the hands of others. They do not feel empowered to change

the existing situation and they recognize that they have to live and work in this setting regardless of the seismic issue. Most have a general sense of trust that the system will rely on experts to ensure safety. Yet there is an open recognition that the vested power interests have great impact on decision outcomes and they see the macro level as potentially corrupt. On a personal level they clearly deny and dissociate from the idea of an earthquake.

This group relies on incrementalism as its basic decision model. Individuals do not see themselves as having power, therefore they participate in successive, but limited, comparison of less than optimal option. They are engaged in a process in which the individual does not identify goals and then seek and analyze alternatives to meet the goal. Rather the goal is adjusted to meet the available resources and possible means. This is a short-term orientation in which values and goals change as new experiences lead to the revision of what is important. It in no way involves a vigilant decision process. Instead it relies on the trust that someone else is doing that vigilant decision process.

The primary coping tools for this level are defensive avoidance expressed in a general lack of interest in the decision process and buck passing where persons assume others know better than themselves what should be done.

There was a clear expression of dissociation as a mechanism for the denial of any thought of earthquakes.

EVALUATION OF HYPOTHESES

The review of this research along with the contribution of the literature now allows us to evaluate the hypothesis.

1. In review of the courthouse decision this study found individuals at all levels processed risk-related information in a manner that allowed for interpretation and acknowledgment of information so that it is compatible with personal agendas and emotional and intellectual constructs.

Content analysis of the interviews reveals that the governor, banker, and developer did not acknowledge the current professional wisdom regarding post-earthquake risk. They basically assessed the situation using personal interpretations which allowed them to make decisions which were compatible with personal agendas and emotional and intellectual constructs. Hickel built his hotel next to a graben to revitalize downtown. The banker financed buildings directly in grabens out of a desire to maintain the downtown investment infrastructure. The developer built his own home right on the cliff overlooking the Turnagain slide and went on to market the nearby area. Each

of these individuals chose not to acknowledge information that would appear to be essential to safety and which was present in clear public view.

The financier/developer assumed that the earthquake risk was being assessed by the insurance company. The insurance representative assumed the responsibility for risk assessment belonged to the developer. The public officials assumed that the risk was assessed by professionals, and professionals assumed that public officials determined the acceptable level of risk. The city assumed that the state was responsible for evaluating the safety of the courthouse. The state legislature assumed the city had determined that the site was acceptable. The court representative transferred the decision responsibility to the professionals. The professionals saw the court as responsible for the decision. Individuals bought or built houses in high-risk areas because the view was wonderful and each developed an explanation for why their house would be safe. Their explanations were not supported by the general scientific facts of the area.

These examples reflect the ways in which the interpretation of the information allowed each player to proceed with an agenda which was compatible to personal, emotional, and intellectual constructs.

2. This research indicates that private and public decision systems are designed to allow for the recognition, interpretation, and conclusion of information in ways so that information is compatible with personal agendas and social constructs.

The insurance system is set up to spread loss so broadly that the risk assessment becomes less of an issue than marketing the risk. The financier/developer sees disaster as an economic boom associated with federal assistance and insurance claims. The banker can proceed with construction on high-risk land without insurance. Yet insurance is available once the project is done. The system is designed to protect the interests of the private investor and as a result information associated with risk assessment is interpreted in positive terms for the investor. The private professional review system sees itself as advisory, while decision makers indicate that they just are doing what the professional expert says is right.

At a federal level the original task force after the earthquake provided essential information for hazard mitigation. Yet they did not tie the availability of all the disaster relief to a community commitment to implement mitigation. Disaster loans were processed through local banks and the related economic boom fueled the reconstruction momentum on high-risk property.

The state government does not evaluate seismic issues associated with state capital projects. They abdicated responsibility for public earthquake safety to the local level. The state's review of the courthouse evaluation of seismic issues was limited to three sentences in a public hearing. Legislators who voted for the project did not even know there were seismic issues.

At a local level the court decision process was spread over a 12-year period and many public agencies. This resulted in a lack of continuity of information. Some major reports were only seen by a few decision makers. The extended time factor made it extremely difficult for any one person or review body to be knowledgeable about important related issues. It can be interpreted that the court had the endurance to simply wear down the review system over time. There was no single local government document file or court document file which contained all the review information. The review process at local government level was distributed between the Geotechnical Commission, Planning Commission, the city council, and the mayor. Each level of review expressed a perception that it had a limited role in evaluating the project. One level of evaluation deferred responsibility to another. Two completely different city administrations were involved in the review process. The outcome resulted in the review system allowing for recognition, interpretation, and inclusion of

decision-related information that was compatible to the personal and political agendas of the decision participants.

3. This research supports the premise that individuals and society manifest cultural dissociation to the extent that they are capable of blocking out or repressing true risk-related information which is incompatible with their cultural constructs and agendas, even when that information is essential to our safety and presented in our public view.

The record shows an ongoing flow of information regarding seismic risk directed toward the general public, private and professional communities, and public decision makers. This information has taken the form of indepth news articles, local seminars, and special risk assessment reports. On the courthouse project there was an overwhelming amount of technical information indicating the site was not optimal for the construction of a public building and that ground failure is a potential problem should there be another significant earthquake. The community response was to seek design which would reduce loss in the case of ground failure.

The combined impact of earthquake related information has been negligible in terms of directing the city to select safe sites for its buildings. The community has consistently decided to reconstruct high-rise buildings on land that was designated as high risk after the 1964 earthquake. Many of those

buildings do not have specific designs to ensure the reduction of loss in case of earthquakes.

If the premise of risk-based cultural dissociation is correct, one must be concerned about how society is processing information related to other issues which are essential to individual and public safety.

LIMITATIONS OF RESEARCH

There is a large amount of information presented in the interviews that has not been explored. This research is designed to allow the simple presentation of the different perspectives to reveal the perceptual and construct distinctions. Those contrasts and distinctions could be expanded through more interview content analyses.

The study could also have benefitted from continued interviews. For example, the court representative suggested that I verify his statement with his assistant who was an active participant from the court in the decision process. The banker suggested I speak with an engineer who supported his view of the buildability of the bluff. He also suggested I speak with an old time insurance executive that I believe was instrumental in providing the original insurance on the bluff. I also did not interview the actual construction contractor who is building the courthouse addition. I decided on the number of interviews based

on what I felt provided a full picture of the decision in relation to my research resources.

There was no single comprehensive file system available which holds a clear record of each decision associated with bluff reconstruction and the courthouse. Therefore the review of the record is my best effort to present a complete view of what occurred in the process.

The selection process which hired Shah has not been fully explored. He is a key person in the decision process and it seems important to know how he was selected. The court representative said he could not remember but that he was picked out of a listing of three experts because he happened to be the closest on the West Coast. His assistant wasn't sure where the list came from.

This study could benefit from an expanded examination of micro level perceptions. The individual perceptions of risk could be more fully explored. The micro level played a limited role in the decision process, and consequently got less attention in the research. Yet they will experience the greatest impact if there is an earthquake.

FUTURE RESEARCH

The premise of risk-based cultural dissociation should be examined through study of other decision processes which have later resulted in

disastrous outcomes. The Alaska oil spill, the Challenger space shuttle accident, the California fires, and the recent Midwest floods would be interesting case studies. It would also be interesting to examine the degree to which cultural dissociation occurs regarding a variety of important social, political, and environmental issues, such as AIDS, child abuse, violence in the media, gun control, the control of nuclear waste, and environmental mutilation of the rain forest or the vast extinction of animal species.

Other future research could focus on the examination of personal dissociative behavior in risk assessment. The research could ask to what degree is dissociation a benefit in processing risk-related information and are there behavior indicators which can alert individuals that they are dissociating from a potential risk?

The research also raises the question of a single decision participants' power in determining community direction. It would be valuable to know how and why Wally Hickel is so powerful in determining the direction of Anchorage. Does his power have anything to do with his wealth and leadership style, cultural dissociation, or the nature of the community? What is the role or impact of a charismatic leader in the dissociative society? Can a dissociative society be directed by a leader to selectively dissociate for specific information?

What insight would help leaders of a dissociative society? Does a society function like a dissociative individual? The extreme form of dissociation for an individual is multiple personality disorder. Is it possible for a society to have multiple personalities? If it is possible, how would a leader integrate the different societal personalities to insure all facets of the community are represented in the community decision process? Or, could a leader appeal to a dominant aspect of the societal personalities? This research suggests these provocative questions and offers ground for their examination.

There are other avenues of interest that this work raises. Future study could also look at the power of an outside expert in relation to local experts and evaluate the positive and negative aspect of bringing in outside experts. A study could also compare the California review system and community values to the Alaskan review system and community values.

CONCLUDING COMMENTS

Economic Health Does Not Insure Public Safety

It is my belief that the review system for the Anchorage courthouse addition resulted in the best possible building being constructed on genuinely dangerous land. I believe that as a result of the decision other buildings will be built on high-risk land adjacent to the courthouse. I believe that if there is

another major earthquake the courthouse addition will withstand the impact better than any other building in the bluff area. Yet loss of life and damage associated with future earthquakes would be significantly reduced if the courthouse addition had been constructed on land which was not designated as high risk.

I believe that the participants responded to salient issues in the decision process with the basic intent to do the right thing within their own life constructs, paradigms, and agendas. The court kept the court together, the city followed the master plan, the State supported the city, the engineer built the best building he could build. Yet the most salient issue was the sociopolitical and economic pressure to insure the protection of downtown interests. The influence of vested power is obvious in the decision process. I do not believe that this situation is unique to Anchorage. Studies of other communities have resulted in similar observations.

The fact that downtown Anchorage was originally sited on high-risk land determined much of the community's future locational decisions. Yet the community had a choice as to whether or not to rebuild on high-risk land after the 1964 earthquake. The influence of vested power in the decision process cannot be ignored. The process seems to be driven by an unspoken agreement that economic health and profit is the primary source of individual and

community good. There seems to be an assumption that those who hold the power regarding profit can best determine the ultimate fate of the community.

Protecting economic investments does not insure community safety.

Seismic issues were clearly ignored in order to protect the interests of vested power. I was surprised at the consistency in the names of people identified as powerful and the degree to which they were associated with real estate in downtown Anchorage. I was also surprised at the numerous levels of decision which were impacted by a single powerful person, now-governor Walter Hickel.

Self-centered Profit Motive and the Loss of a Communal Future

After viewing this decision process, I question the ultimate effectiveness of a system which ignores geological information to realize relatively short-term economic goals. The record implies that the system of review continued until the review resulted in the outcome which was preferred from the outset by vested interests.

I was struck by how often those interviewed mentioned death, in terms of not thinking about earthquakes any more than death, or by saying that they saw earthquakes as inevitable as their own death. These statements are potentially self-fulfilling prophecies. They reflect a fatalistic cultural perception that our future is so compromised with nuclear weapons, ozone depletion, AIDS, and other major global problems that we are doomed to not survive. I

believe that the death statements are statements of self-centeredness resulting from the loss of belief in a communal future.

There is much more at issue in building a safe community than one decision maker's life or death. Yet it seemed that many decision participants measured their decision in relation to what would happen to them, how it affected their own agenda, how it fit into their own reality construct. What were the chances that a major earthquake will occur in their lifetime? If the chances of personal loss seemed low, then it must be okay to build on this land.

We know that cities last for centuries, and great tragedies occur as a result of very ancient decisions. If we plan to survive we must make a commitment to the long-term future of our cities. Is a poor decision somehow rectified if the tragedy occurs 300 years after the decision is made? I don't think so. The measure of the decision is whether or not we knew at the time we built that it was dangerous land and how we decided in relation to that knowledge.

I believe that there was short-sightedness in the reconstruction decision process. The general values of importance seemed to be whether or not a building lasted as long as the decision maker and as long as it takes to produce a profit. I think this criticism could be directed to how we approach many

current day decisions, i.e. nuclear waste containment, overfishing the ocean, ozone depletion, and clear-cutting rain forests.

Moral Commitment vs. Pragmatism

The insurance agent who talked about the fact that love was not a component calculated into the decision process for building was wise. He pointed out that we express love in our decision only after the disaster. Our society is so centered on immediate short-term economic gratification that we abandon real moral conscience. This study found the moral question of reconstruction was lost by the sway of pragmatic decisions based on individual desire, personal concerns, and the concerns of the vested power.

The Implication of a Dissociative Society

It appears to me that we are a dissociative society, and there are important aspects about ourselves we need to understand. An extremely dissociative person can manifest multiple personality disorder. One body can house several fully developed individuals, all who are strangers to one another. If our society functions in this manner, it would not be surprising to find a fragmented society that is often working at cross-purposes to itself.

This research found that there were many functioning levels of decision making. To a great degree each level seemed to have different goals in the

decision process. Yet no level took into account the big question of long-term social responsibility for the decision.

As I did the interviews I felt like I was stepping into separate realities of how the world really works. People truly believe different truths. Of course there are many ways to understand a problem. Yet the macro reality, dominated by power and profit, was radically different from the meso level of professionalism. The micro level of powerlessness and trust was even more different from the other two. It was as if none of these levels really understood the motivation and perspective of the other levels. It was as if they had vague fantasies about who one another really was. These separate realities and the lack of understanding between levels imply a deterioration in communication between levels of community constructs. That deterioration can in itself lead to further fragmentation and loss of a sense of community. This loss of community encourages focus on individual gratification.

As an interviewer, I brought to the study my own filters of the decision process, but the truth is that, as I spoke with each person, I found myself understanding why they each did what they did and how it made sense in their own life construct and analyses.

When it was all said and done, I believe we have made the best of a poor decision. It seems, after much review, the decision to construct a high-rise

high-occupancy courthouse on high-risk land is foolish. That foolishness lies in culturally veiled values. The question I cannot answer is: Are we fooling ourselves or are we being fooled?

Reality must take precedence over public relations,
for Nature cannot be fooled.

Richard P. Feynman
(on the Challenger Disaster)

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Appendix A:
Consent Form

REVISED
CONSENT FORM FOR INNER CIRCLE

I, _____, hereby agree to participate in the research project being conducted by Sheila S. O'Malley under the supervision of Portland State University.

I understand that this study involves an interview which will explore my perceptions and insights associated with the decision and rationale to construct the Anchorage Courthouse Expansion. I know the study may make references such as "an architect stated", or "a prominent businessman commented" and will not specifically name my identity. I know that the interviews will be taped and I know that the researcher will keep all information confidential.

It has also been explained to me that the purpose of this study is to better understand the ways individual's process technical information and to explore the rationale and process of individual and community decision-making.

Sheila has offered to answer any questions I have about the study and what is expected of me. I have been assured the researcher will work to keep all information confidential. My name will not be used for publication or for public purposes.

I may discontinue my involvement in the study at any time.

I have read and understand the foregoing information and I agree to participate in this study.

Signature Date: _____

If you experience problems that are a result of your participation in this study, please contact the secretary of Human Subjects Research Review Committee, Office of Grants and Contracts, 303 Cramer Hall, Portland State University, Portland, Oregon 97207-0751, (503) 464-3417.

Note: The name of the researcher as identified in the first paragraph has changed since this form was used, from Sheila S. O'Malley to Sheila A. Selkregg.