

UTAH SEISMIC SAFETY COMMISSION

Meeting
January 9, 1998

MINUTES

On January 9, 1998, a regularly scheduled quarterly meeting of the Utah Seismic Safety Commission was held at the State Office Building, Room #1112, Salt Lake City, Utah. The meeting was called to order at 9:05 a.m. by Chairman Walter Arabasz.

Members Present:

-M. Lee Allison	Utah Geological Survey
-Walter J. Arabasz	Chair/Seismic Safety Commission-University of Utah Seismograph Stations
-James Bailey	Structural Engineers Association of Utah
-Lorayne M. Frank	Division of Comprehensive Emergency Management
-James W. Golden	Structural Engineer Division, Department of Transportation
-Bill Juscak	Utah Division of Facilities Construction & Management
-Peter C. Knudson	Utah House of Representatives
-Sen. Craig A. Peterson	Utah State Senate
-Barry Smith	Western Mountain Region, American Institute of Architects
-Suzanne Winters	Governor's Office of Planning and Budget
-Les Youd	BYU Civil Engineering Department

Members Not Present:

Kenneth Bullock	Utah League of Cities and Towns
Craig L. Dearden	Utah Department of Public Safety
Randall G. Updike	U.S. Geological Survey (Ex-Officio)
Russ Wilder	Federal Emergency Management Agency (Ex-Officio)

CEM Staff Present:

-Bob Carey	Mitigation & Planning Section, CEM
-Don Cobb	Natural & Technological Hazards Bureau, CEM
-Sylvia Haro	Mitigation & Planning Section, CEM

UGS Staff Present:

-Gary E. Christenson Utah Geological Survey
-Janine Jarva Utah Geological Survey
-Barry Solomon Utah Geological Survey

Guests Present/Committee Members:

-Rich Byfield Division of Facilities Construction & Management, DAS
-Ronald Dunn Engineering and Architecture Committee/Dunn Associates, Inc.
-Craig Nelson Salt Lake County Geologist
-Larry Newton State Office of Education
-James Pechmann University of Utah Seismograph Stations
-Lee Siegel Salt Lake Tribune
-Barry Welliver Structural Engineering
-Natalie Gochnour Governor's Office of Planning and Budget

WELCOME / INTRODUCTION

Chairman Walter Arabasz welcomed and thanked everyone for attending the meeting.

APPROVAL OF MINUTES

MOTION: Lorayne Frank made the motion to approve the minutes from the meetings held on July 2, and October 10, 1997. The motion was seconded by Les Youd. The minutes from both meetings were unanimously approved with the following corrections: Add the names of Bill Juszczak, Division Facilities Construction & Management, and Craig L. Dearden, Department of Public Safety to “members not present” to the minutes from both meetings. On minutes from October 10, 1997, page 5, paragraph four, delete “they need to be submitted prior to December 1, 1997.”

UTAH'S GROWTH AND DEVELOPMENT

Natalie Gochnour, Economist, Governor's Office of Planning and Budget, made a presentation on “Addressing quality growth issues in the Wasatch Front area.” She described the program *Envision Utah*, formerly known as the Utah Quality Growth Public/Private Partnership, sponsored by the Coalition for Utah's Future. The program aims to present quality-growth-planning issues to the public, look at baseline scenarios, and develop growth-management strategies. Ms. Gochnour also described as QGET (Quality Growth Efficiency Tools), the technical arm of Envision Utah. State and local monies are

used to fund models of population, land use, air quality, transportation, etc. There are various committees involved in this program, including the Baseline Scenario Committee, which conducts studies on current trends, current models, and plans. The Baseline Scenario Committee provides a general vision of likely future conditions up to the year 2050, under certain circumstances. There are some limitations: Subject areas are limited to demographics, economics, transportation, air quality, water, sewer, and land use. Geographic focus is limited to the Greater Wasatch Area, a 10-county area (Brigham City to Nephi and Tooele-Heber).

Population Findings

Current population in the Greater Wasatch Area is 1.62 million, similar to Portland's metro area. By the year 2020, the population will grow to 2.7 million, similar to the San Diego area. Utah is considered a state with a rapid rate of growth, twice the national average, however, Utah's growth rate is similar to other intermountain states. Last year, Utah's population grew by 2.2%, Nevada grew by 4.5%. The primary reason for the rapid population growth is the high fertility rate and low mortality rate. Utah's fertility rate is 24% higher than the U.S. average and is the highest in this country. Each year, on average, in the 10-county area through the year 2020, population grows by 43,000 people (equivalent to the city of Bountiful), averaging about 17,400 new households.

Transportation Findings

Even with current investments in transportation, the demand for travel will continue to exceed the state's ability to fund transportation infrastructure. The current average commute time is 24 minutes. By 2020, it would take 10 additional minutes for the same commute. Drive-alone travel makes up 77% of total trips. Light rail will improve mobility, vehicles per capita will go up, delay per trip will go up, and the average peak-period speed will go down with more congestion. State and regional transportation project plans, through the year 2020, would cost \$9.7 billion.

Air Quality Findings

The emission of all five major pollutants will increase, particularly from automobiles, which are the single largest source of emissions and of greatest concern. The new air-quality standards that are coming up will make it even more difficult for the state to meet these standards. Air-quality would be considered a constraint to future growth in this area.

Water Findings

In the baseline, it is projected that there will be a decline in per capita water use, but the use will be higher than the intermountain U.S. average. Water rates will increase, but water availability would not be a constraint to future growth. However, the cost of \$3.2 billion would be considered a constraint.

Land Use Findings

The urban portion of the greater Wasatch Front area will nearly double, going from 320 square miles to 590 square miles by the year 2020. Urban expansion will result in the loss of 13% of irrigated agricultural lands in this area. Density in this area will also increase. In 1997, the fastest population growth rate in the state was Tooele County.

Questions/Comments

Dr. Arabasz indicated that Utah's future growth and development will take place right on top of the active Wasatch fault. The Utah Seismic Safety Commission is concerned with Utah's long-term earthquake safety. One particular question as we identify earthquake safety priorities would be timeliness. Other issues that relate to earthquake safety include transportation, infrastructure, dam safety, water, land use, and geologic hazards. Dr. Arabasz asked whether the limited scope of the Baseline Scenario Committee should affect our prioritization of things that we put forward for targets for action. "How might we, as the Commission, connect, address, and discuss issues of concern with Envision Utah?" Dr. Arabasz asked. Ms. Gochmour recommended that the USSC make a presentation before the Baseline Scenario Committee to address the Commission's issues. The Baseline Scenario Committee is chaired by Jim Clark of American Stores and Brad Barber, Governor's Office of Planning & Budget. Other members represent interests of the USSC, such as representatives from the architectural industry and Homebuilders Association, and a community planner. A consultant (Peter Calthorpe) was hired to complete renderings, drawings, and maps; hold public meetings; and get input from the public. Les Youd suggested an earthquake scenario and what it would do to Utah's growth and development. Ms. Gochmour responded that disasters have not been considered in the modeling. Senator Craig Peterson indicated that the Commission has the responsibility to mitigate seismic issues through design and placement of various types of structures, and through evaluation of hazardous areas, and should help in the planning effort so that earthquake dangers become part of the planning rather than looking at the disaster after the fact and patching it up.

☐ EARTHQUAKE SAFETY IN NEW SCHOOL CONSTRUCTION

Mr. Ronald Dunn reported that the Architecture and Engineering Committee met with school

officials and discussed how to ensure earthquake safety in new school construction. The Committee discussed options, presented at the previous USSC meeting, to have value engineering and seismic analysis conducted by the same Cold Team. Value Engineering takes place at approximately 30% completion of design plans and it was suggested that the same Cold Team members come back at 90% submittal to provide the seismic review. The process would have little impact on budget issues and timeliness because the same person would have the advantage of being familiar with the project, site, macro aspects of the building design, and would ensure the project conforms with the new seismic safety guidelines. This suggestion was supported by members of the committee, school officials, and design engineers present at the Architecture and Engineering Committee meeting. Certain seismic safety knowledge and experience would be required by individuals in the Cold Team performing this type of analysis, and the Committee would establish those qualifications. Nationally, school officials don't want to compromise safety for money, but money is an issue. This process would save money and a seismic review would be conducted by certified and licensed inspectors, who would review the plans and the actual building structure. Value engineering is being done on any building \$30,000 or more. Mr. Dunn would like to see the need for value engineering based on square footage rather than dollar amount.

Rich Byfield indicated that current reviews being done by the Cold Team (architects and engineers who are not part of the original design team) address building function but not seismic safety.

James Golden stated that the team that did the value engineering of the I-15 Reconstruction Project was put together to look at function and cost savings, and it was not the same group of people you would want to evaluate seismic safety. Mr. Golden did not think it would be a good idea to use the same group of people unless they were specifically capable of doing both types of analyses.

Bill Juszczak indicated the state has a structural engineer on staff who does the state building reviews, which covers seismic analysis at 95% submittal.

Mr. Dunn and Mr. Newton suggested that a meeting be arranged with State Superintendent of Public Instruction Scott Bean and include the chairman of the USSC, representatives of the Architecture and Engineering Committee, interested members of the Commission, and other interested individuals regarding the Committee's recommendations on seismic analysis.

MOTION: Walter Arabasz made the motion that he be tasked to make

arrangements for a meeting between Scott Bean, Larry Newton, the USSC chair, and other interested parties from the Commission to allow the Architecture and Engineering Committee to make a presentation on earthquake safety in new school construction. Suzanne Winters seconded the motion. The motion was unanimously approved.

☐ **THE “DISAPPEARING” FAULT IN SALT LAKE CITY**

Craig Nelson - Salt Lake County Geologist, 1985-1992; private geologist for a private company for the next five years; returned to Salt Lake County in November 1997 as Salt Lake County Engineering Geologist to review and provide independent geological opinion on the quality of information provided by developer's geological consultants. In Salt Lake County, no building permits are issued until the county geologist recommends approval. Salt Lake County has a natural hazards ordinance, since 1987, which prohibits placing a building structure for human occupancy over an active fault.

In 1989, Mr. Nelson published a Salt Lake County hazard map (approved by the county commissioners) based on mapping information from U. S. Geological Survey. The map shows the Warm Springs fault in the vicinity of Washington Elementary School. After a trench study and an evaluation of geologic hazards was done on Washington Elementary School, a major trace of the Warm Springs fault was discovered: The beds on opposite sides of the fault could not be matched, with a minimum of 18 feet of displacement. Brian Bryant (previous county geologist) amended the map using one published it in 1992 showing the fault stopping at about 600 North, without review from other professionals. This map (fault) has been referred to as the “disappearing fault in Salt Lake City.”

Mr. Nelson offers an independent geological review to incorporated cities in Salt Lake County for a minimal fee. The reason for the small fees is because he is paid out of funds from unincorporated Salt Lake County. Sandy City and other cities have continued to use these services; however, Salt Lake City has refused to participate up to this point. Mr. Nelson is currently working with Larry Butcher, the reviewer in Salt Lake City. Larry is willing to discuss independent geological reviews in Salt Lake City. Salt Lake City is currently using the older map adopted in 1987.

Mr. Nelson is in the process of developing minimum standards for fault studies and establishing a Geological Review Board, a five or six person technical review board, perhaps with a sixth person as an alternate. The Geological Review Board would review future revisions to the hazard map, so that one person cannot make a change to the map without going through a review process. The Board would also hear appeals to the county geologist's recommendations, and review and approve any revisions to Utah's hazard map.

There is a need for some consistent development standards, not only along the Wasatch Front but statewide. Walter Arabasz asked Mr. Nelson to coordinate with Commission staff so that a progress report could be given at the USSC meeting in April regarding Salt Lake City's position about geological reviews. Les Youd and Suzanne Winters expressed their support of this process.

☐ **INTERIM REPORT FROM GEOSCIENCE COMMITTEE ON "MASTER MODEL" PROPOSAL**

Gary Christenson, Geoscience Committee Chairman, made a report on the master model proposal made by Bob Smith. Mr. Christenson reported that the Geoscience Committee met and considered the questions posed by the USSC Chair: Do the high GPS rates warrant immediate action by the Commission? Is this unified master model proposal technically applicable in Utah and how should we proceed? Regarding the high GPS strain rates, the Geoscience Committee indicated that they cannot necessarily say that the rates indicate an increased earthquake hazard. In addition to measurement uncertainties, there are considerable uncertainties in interpreting the cause of the higher rates. One of the ways to reduce the uncertainties in the GPS rates would be through permanent continuous monitoring instruments. Bob is installing some now. The Committee recommended that further scientific work and consensus building is necessary before recommending any USSC action. Regarding the master model proposal, the Committee needs more information before they can make a recommendation to the Commission. They propose that a workshop be scheduled for the Geoscience community to discuss and develop a strategic plan on the science initiatives.

☐ **STRATEGIES FOR ACTION IN 1998**

Targets/Timetable

Dr. Walter Arabasz asked for all USSC Standing Committees to meet in February to revisit all of their strategies and to report their action plans for 1998 at the April meeting.

Intergovernmental Relations Committee Update

Dr. Suzanne Winters, Science Advisor-Governor's Office of Planning and Budget, reported that she has assembled an Intergovernmental Relations Committee with representatives from Bear River Association of Governments (AOG), Five County AOG, Mountain Land AOG, Olympic Organizing Committee, Wasatch Front Regional Council, Utah League of Cities and Towns, Utah Advisory Council, Envision Utah, and Department of Public Safety. The intention of the Intergovernmental Relations Committee is to bring the level of awareness

and consideration of seismic concerns to the policy makers and planners in the various entities. A Committee meeting will be held within the next month.

Participation from a Utah League of Cities and Towns Representative

Senator Craig Peterson reported that he contacted Ken Bullock of the Utah League of Cities and Towns and was told that Mr. Bullock would be appointing someone to represent them; however, a name was not given. Senator Peterson will continue his efforts in getting a name of a representative for this organization.

USSC meeting with Legislative Fiscal Analyst

Senator Peterson agreed to facilitate a meeting between the USSC and Legislative Fiscal Analyst to discuss cross-departmental initiatives for earthquake safety.

☐ PLANNING FOR SPRING 1998 COMMISSION MEETING IN BRIGHAM CITY

Representative Peter C. Knudson indicated he had spoken to Box Elder County Commissioners and other officials and said that all of the individuals he talked to were very supportive and looking forward to having the USSC hold its Spring meeting in Brigham City. Dr. Arabasz assigned a Planning Committee to make the arrangements for this meeting and make their recommendations to him, which he will then relay to the Commission members and Standing Committee members. Lorayne Frank suggested that a safety fair be done in conjunction with the USSC meeting.

☐ STAFF REPORT

WSSPC Awards

Utah agencies won three of the annual awards from the Western States Seismic Policy Council:

- ◆ *University of Utah Seismograph Stations*, for their earthquake education efforts in schools.
- ◆ *Utah Division of Comprehensive Emergency Management*, for their 1996 booklet on how to reinforce vulnerable brick homes.
- ◆ *Utah Geological Survey*, for their brochures and maps, increasing public awareness of Utah's hazards.

☐ NEXT MEETING

DATE: Wednesday, April 8, 1998

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TIME: 10:00 a. m. - 12:00 p.m.

**PLACE: Bridgerland Applied Technology Center
325 West 1100 South
Brigham City, Utah**

ADJOURNMENT

The meeting adjourned at 11:00 a.m.