

BEFORE THE METRO COUNCIL

FOR PURPOSE OF APPROVING THE RECEIVING ) Resolution No. 95-2149  
OF FEDERAL GRANT THROUGH THE OREGON )  
DEPARTMENT OF GEOLOGY AND MINERAL ) Introduced by: Mike Burton  
INDUSTRIES FOR IMPLEMENTING REGIONAL ) Executive Officer  
EARTHQUAKE HAZARDS IDENTIFICATION )  
AND PREPAREDNESS PROGRAM )

WHEREAS, Metro recognizes the need to identify earthquake hazards in this region and prepare for them; and

WHEREAS, the Federal Emergency Management Agency have allocated money to enable Metro and the Oregon Department of Geology and Mineral Industries to implement a regional earthquake hazard identification and preparedness program in the Portland metropolitan region; and

WHEREAS, Pursuant to ORS Chapter 190, Metro may enter into an agreement with the Oregon Department of Geology and Mineral Industries to receive its share of the federal money; now, therefore,

BE IT RESOLVED,

1. That Metro approves an Intergovernmental Agreement with Oregon Department Of Geology and Mineral Industries (see attached "Agreement").
2. That Metro will accept the Federal Emergency Management Agency grant to enable it to jointly identify earthquake hazards in this region by implementing the specified tasks (see Exhibit A in the "Agreement").

ADOPTED by the Metro Council this 1 day of June, 1995.

  
J. Ruth McFarland, Presiding Officer

# AGREEMENT

**INTERAGENCY/INTERGOVERNMENTAL AGREEMENT FOR EARTHQUAKE  
MITIGATION ACTIVITIES IN THE METRO AREA**

This agreement is between the State of Oregon acting by and through its Department of Geology and Mineral Industries, hereafter called Agency, and Metro hereafter called Contactor. Agency's supervising representative for this agreement is John D. Beaulieu.

1. Effective Date and Duration

The agreement shall become effective on May 1, 1995 (or on the date at which every party has signed this contract, whichever date is later). This agreement shall expire, unless otherwise terminated or extended, on June 30, 1996. The agreement will be automatically extended if prior to June 30, 1996 the following occurs: The Agency approves a written request submitted by Metro or submits an extension to Metro in writing which specifies again the total contract amount and the end date for the extension. The extension will be for a period ending at the specified date, but no later than June 30, 1997.

2. Statement of Work

- a) The statement of work is contained in Exhibit A attached hereto and by this reference made a part hereof.
- b) The delivery schedule for the work is identified in Exhibit B.

3. Consideration

- a) The Agency shall pay Contractor a total amount of \$ \$515,850 for the accomplishment of the work. This shall be the sole monetary obligation of the Agency.
- b) Interim payments shall be made to Contractor according to the schedule and requirements identified in Exhibit A, or if no schedule is identified on Exhibit A, on a quarterly basis after billing and after demonstration of adequate progress on the tasks specified in Exhibit A. The Agency shall be the sole judge of adequate progress.

4. Subcontracts

Contractor may enter into any subcontracts for any of the work scheduled under this agreement and provide written notification in advance to the Agency's Project Officer.

5. Amendments

The terms of this agreement shall not be waived, altered, modified, supplemented, or amended, in any manner whatsoever, except by written instrument signed by both parties.

6. Termination

- A. This agreement may be terminated by mutual consent of both parties.
- B. The Agency may terminate this agreement effective upon delivery of written notice to the Contractor, or at such other date as may be established by the Department under any of the following conditions:
  - 1. If Agency funding is not obtained and continued at levels sufficient to allow for purchase of the specified services. When possible, and when agreed upon, the agreement may be modified to accommodate a reduction in funds.
  - 2. If federal or state regulations or guidelines are modified, changed or interpreted in such a way that the services are no longer allowable or appropriate for purchase under this agreement, or are no longer eligible for the funding proposed for payments authorized by this agreement.
  - 3. If the Contractor fails to perform the work specified herein, or so fails to pursue the work as to endanger performance of this agreement in accordance with its terms, and after receipt of written notice from the Agency, fails to correct such failures within ten (10) days or such longer period as the Agency may authorize.

7. Funds Available and Authorized

The Agency certifies at the time the agreement is written that significant funds are available and authorized for expenditure to finance costs of this agreement in Exhibit C within the Agency's current appropriation and limitation.

8. Captions

The captions or headings in this agreement are for convenience only and in no way define, limit or describe the scope of intent of any provisions of this agreement.

9. Access to Records

The Agency, the Secretary of State's Office of the State of Oregon, the federal government, and their duly authorized representatives shall have access to the books, documents, papers, and records not otherwise privileged under law of the Contractor which are directly pertinent to the specific agreement for the purpose of making audit, examination, excerpts, and transcript.

10. Compliance with Applicable Law

Contractor shall comply with Title VI of the Civil Rights Act of 1964; (ii) Section V of the Rehabilitation Act of 1973; (iii) the Americans with Disabilities Act of 1990 (Pub L No. 101-336), ORS 659.425, and all regulations and administrative rules established pursuant to those laws; and (iv) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.

11. Recycled Paper

Contractor agrees to use recycled paper for all reports which are prepared as a part of this agreement. This requirement applies even when the cost of recycled paper is higher than that of virgin paper.

12. Merger Clause

THIS AGREEMENT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES. NO WAIVER, CONSENT, MODIFICATION OR CHANGE OF TERMS OF THIS AGREEMENT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION OR CHANGE, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS AGREEMENT. THE CONTRACTOR, BY THE SIGNATURE BELOW OF THIS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT HE/SHE HAS READ THIS AGREEMENT, UNDERSTANDS IT AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

13. Contractor Data

Organization: Metro

Project Coordinator: Dr. Gerald Uba

Address: 600 N. E. Grand Avenue, Portland Oregon 97232

Phone: (503) 797-1737

14. Agency Data

Organization: Oregon Department of Geology and Mineral Industries

Project Officer: Dr. Mathew Mabey

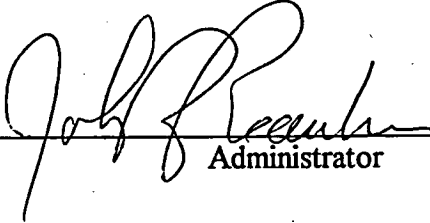
Address: Room 965 Oregon State Office Building, 800 Oregon Street N. E. , Portland,  
Oregon 97232

Phone: (503)731-4100

15. Signatures

Contractor: By: \_\_\_\_\_ Date \_\_\_\_\_

By: \_\_\_\_\_ Date \_\_\_\_\_

Agency: By:  \_\_\_\_\_ Date 5/15/95

Administrator

## **EXHIBIT A**

### **METRO'S 1995-1996 PROGRAM TASKS**

#### **Year 2: FY 1995-96 Program Tasks**

##### **Building Inventory and Assessment**

Task 1. Integrate seismic hazard data layers produced by DOGAMI for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton, and Linnton 1:24,000 quadrangles into the METRO's Regional Land Information System (RLIS).

Task 2. Collect general structural type and seismic vulnerability data (i.e. Rapid Visual screening data) for major buildings on the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles. One and two-family residential structures are not to be included in the vulnerability data collection. Likely to be done by sub contract. Approximately 17,000 buildings are in this area.

Task 3. Integrate the building assessment data sets into METRO's RLIS .

Task 4. Produce and distribute maps showing the distribution of building types and maps of building type overlain on seismic hazard zones for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles.

##### **Lifeline Inventory and Assessment**

Task 5. Locate and access as much information on public and privately owned lifelines (natural gas, water, electric, sewer, telecommunications and highway) on the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles as possible. Efforts will be focused on those systems which serve the largest areas, the largest number of people, or who's data already exists in an electronic/digital format.

Task 6. Integrate as much of the lifeline data into the RLIS database as possible with as great of detail as practical.

Task 7. Produce and distribute various theme maps of lifeline distribution data and of lifeline data overlaid on seismic hazard zones for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles.

##### **Damage and Loss Estimation.**

Task 8. Use loss and vulnerability estimation models to predict effects losses for one scenario earthquakes (local crustal) covering the Portland, Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles. Main focus will be on estimating losses based on models that Metro and its contractors have already developed. Qualitative discussion of a subduction zone earthquake event will be provided to scope major differences in terms of damage distribution etc.

Task 9. Publish and distribute the results of the loss estimation studies. Conclusions will focus on highlighting the greatest sources of risk and obvious areas for cost effective mitigation measures.

## **Information Transfer**

Task 10. Develop a "Disaster Mitigation, Response and Recovery Atlas" for emergency management agencies and other mitigation planners, using the data files in the RLIS system.

Task 11. Integrate and link the seismic hazard, building and lifeline data in the RLIS system with the Oregon Emergency Management Information, and develop plans to transfer the data to local Emergency Operations Centers in the Portland Metro Area.

## **Mitigation Policy Implementation**

Task 12. Procedures for correlating land uses with earthquake performance standards and conceptual framework for developing and implementing model land use regulations will be finalized. This will be done by working with the 22-member Metro Advisory Committee for Mitigating Earthquake Hazard (MACMED). MACMED consists of land use and emergency management planners, building officials, developers, and a geologist. MACMED is providing technical oversight on finalizing model regulations for earthquake hazard mitigation and reducing risk in the Portland metropolitan region. MACMED is currently reviewing a draft report that shows how land uses grouped by seismic risks could be correlated with the hazard zones shown in the Relative Earthquake Map of the Portland Quadrangle. The methodology for correlating land uses with earthquake hazard zones will be refined and final model land use regulations will be developed.

Metro staff will, with the assistance of consultants, analyze the impact of the correlations on buildable urban land inventory and make recommendations to MACMED. Consultant will also provide copies of materials MACMED will need to develop the implementation framework. These materials will include seismic safety elements of local general plans, sample geologic and geotechnical reports, guidelines for preparing geologic and geotechnical reports, and local procedures for requiring and reviewing geologic and geotechnical reports, all in cooperation with other relevant efforts in the state. Metro will also provide MACMED and its subcommittees with the assistance it needs in reviewing and discussing the materials and making recommendations that will be used to finalize land use regulations and to develop the conceptual framework for implementing the model land use regulations and building code requirements, including those for existing buildings, for mitigating earthquake hazards.

Task 13. Provide local emergency management agencies with technical assistance on the use of the seismic hazard maps, building and lifeline data and the Disaster Mitigation, Response and Recovery Atlas. This will include the addition of emergency management resources data to Metro's RLIS and the development of a regionwide disaster planning data base accessible to member jurisdictions of the REMG and Oregon Emergency Management and other entities that may be identified later.

Collaborate with private and public utility agencies and REMG in using seismic hazard information and maps to develop: a) disaster debris management strategies; b) emergency transportation routes. The emergency transportation routes will be used to promote prioritization of mitigation efforts in the region.

Provide staff for administration of the REMG efforts towards developing and implementing a comprehensive regional emergency management plan. Metro will continue to provide technical assistance to local governments and other users on the uses for the disaster response and recovery atlas and the geologic and structural hazard data for mitigating structural and nonstructural seismic risks, and for disaster response and recovery planning.



Task 14. Metro staff will participate in the meetings and activities of the Oregon Seismic Safety Policy Advisory Commission, Regional Emergency Management Group and Oregon Emergency Management.

### **Outreach Regional Earthquake mitigation workshops**

Task 15. Conduct focused public workshops The workshops will have strategic themes targeting audiences such as public officials, businesses, the Red Cross, parent teacher organizations, insurance companies, financial institutions, public utilities, transportation planners and citizens. Collaborate with federal, state, local emergency management agencies and private utilities in organizing custom earthquake mitigation, preparedness, response and recovery workshops for emergency planners and engineers and developing emergency preparedness tools for the region.

### **Training**

Attend relevant emergency management training organized by FEMA, Oregon Emergency Management and other entities.

### **Computer Requirements**

A high speed UNIX workstation, operating ARC/Info GIS software is needed for the extensive amount of mapping and spatial data analysis required. Year 1 was accomplished with an X-terminal connection to a Metro host UNIX computer. The larger databases to be produced by Year 2 and the current overload on Metro's host necessitates leasing a workstation and ARC/Info license. The current configured network and X-terminal are constraints on the amount of product the earthquake staff can output and on other users of the system. Charges for connection to and maintenance of metro's computer network and Internet services are not included in the budget.

### **Deliverables**

Map of building structure type overlaid on seismic hazard zone for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles.

Map of lifelines and critical facilities overlaid on seismic hazard zones for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles.

Report on the loss estimation studies for the Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linnton 1:24,000 USGS quadrangles.

Final set of land use correlations with earthquake performance objectives and hazard zones, and framework for implementing model land use regulations

Disaster Response and Recovery Atlas

Workshop proceedings

## **EXHIBIT B**

### **REGIONAL EARTHQUAKE HAZARD IDENTIFICATION AND PREPAREDNESS PROGRAM** *(Understanding the Risks and Preparing for Them)*

#### **METRO'S DELIVERY SCHEDULE**

##### **FIRST QUARTER: May 1 to July 30, 1995**

1. Integrate Mt Tabor, Gladstone, Lake Oswego and Beaverton and quads seismic hazard data into Metro's RLIS (Task 1<sup>1</sup>)
2. Set up contract for the Rapid Visual Screening of buildings (Task 2)
3. Locate and identify sources of data for lifeline systems and critical facilities inside Mt. Tabor, Gladstone, Lake Oswego, Beaverton and Linton quads (Task 5)
4. Develop a conceptual design for linking Metro's RLIS to Oregon Emergency Management (OEM) information system (Task 11)
5. Set up contract for finalizing the correlations of land uses with earthquake performance standards and conceptual framework for developing and implementing model land use regulations (Task 12)
6. Assist REMG in developing a region-wide electronic network that will make seismic risk database in RLIS to be accessible to emergency planners (Task 13)
7. Participate in the meetings of OSSPAC, REMG and Oregon Emergency Management (Task 14)
8. Develop outline of custom workshops for the year (Task 15)
9. Attend relevant emergency management training

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<sup>1</sup> Tasks in Appendix A associated with items in this delivery schedule are shown accordingly.

**Deliverables:**

1. Signed contract for Rapid Visual Screening of buildings
2. Signed contract for model land use regulations
3. Conceptual design for linking Metro's RLIS and OEM information system
4. List of lifeline data sources
5. Outline of custom workshops

Cumulative billings for first quarter \$71,531.00

**SECOND QUARTER: August 1 to October 31, 1995**

1. Integrate Linton quad seismic hazard data into RLIS and combine same with Portland, Mt. Tabor, Gladstone, Lake Oswego and Beaverton quads' data (Task 1)
2. Execute Rapid Visual Screening contract (Task 2)
3. Collect lifeline and critical facilities data (Task 5)
4. Develop outline for the "Disaster Mitigation, Response and Recovery Atlas" (Task 10)
5. Implement and test the linkage of RLIS and OEM information system (Task 11)
6. Execute contract for model land use regulations (Task 12)
7. Collaborate with utility companies and REMG to initiate the development of regional emergency transportation routes that will be used to promote the prioritization of mitigation strategies (Task 13)
8. Participate in meetings of OSSPAC and REMG (Task 14)
9. Implement a custom workshop (Task 15)

**Deliverables:**

1. Outline of Disaster Mitigation, Response and Recovery Atlas

Cumulative billings for second quarter \$174,031.00

**THIRD QUARTER: November 1 to January 31, 1996**

1. Start to integrate building assessment data sets into RLIS (Task 3)
2. Start to integrate some lifeline data into RLIS (Task 6)
3. Start to relate buildings data to earthquake hazards data and scenario using damage and loss models (Task 8)
4. Develop draft of "Disaster Mitigation, Response and Recovery Atlas" (Task 10)
5. Finalize the linkage of RLIS to OEM information system and the region-wide electronic network (Task 11 and 13)
6. Finalize the correlations of land uses with earthquake performance standards and conceptual framework for developing and implementing model land use regulations (Task 12)
7. Participate in meetings of OSSPAC, REMG and Oregon Emergency Management (Task 14)
8. Attend relevant emergency management training

**Deliverables:**

1. One copy of the results of the Rapid Visual Screening
2. Some maps of lifeline systems and critical facilities in six quads
3. Copy of the model land use regulation report

Cumulative billings for third quarter

\$163,254.00

**FOURTH QUARTER: February 1 to April 30, 1996**

1. Complete integration of building data into RLIS (Task 3)
2. Produce maps of buildings overlain on seismic hazard zones in the six quads (Task 4)
3. Complete integration of lifeline data into RLIS (Task 6)
4. Produce maps of lifeline systems and critical facilities overlain on seismic hazard zones in six quads (Task 7)

5. Publish and distribute the results of damage and loss estimation study (Task 9)
6. Publish and distribute "Disaster Mitigation, Response and Recovery Atlas" (Task 10)
7. Publish and distribute map of emergency transportation routes (Task 13)
8. Participate in meetings of OSSPAC, REMG and Oregon Emergency Management (Task 14)
9. Attend relevant emergency management training

**Deliverables:**

1. Copy of results of Rapid Visual Screening of Buildings
2. Maps of buildings overlain on hazard zones
3. Maps of lifeline systems overlain on hazard zones
4. Copy of damage estimation study
5. Copy of Disaster Mitigation, Response and Recovery Atlas
6. Map of emergency transportation routes

Cumulative billings for fourth quarter

\$107,034.00

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May 10, 1995

# EXHIBIT C

## REGIONAL EARTHQUAKE HAZARD IDENTIFICATION AND PREPAREDNESS PROGRAM *(Understanding the Risks and Preparing for Them)*

### METRO'S BUDGET

YEAR 2: FY 1995<sup>1</sup>

|   |                  |                                    |
|---|------------------|------------------------------------|
| <b>PROPOSED BUDGET</b>                      |                  | <b>\$542,500</b><br>(Federal Fund) |
| <b><u>ACTUAL BUDGET</u></b>                 |                  | <b>\$515,850</b>                   |
| <b>Personnel Services Costs<sup>2</sup></b> |                  |                                    |
| 1. Division Manager<br>0.05 FTE             | \$3,502          |                                    |
| 2. Program Supervisor<br>1 FTE              | \$56,709         |                                    |
| 3. Emergency Analyst<br>0.85 FTE            | \$44,025         |                                    |
| 4. GIS Specialist<br>1 FTE                  | \$35,985         |                                    |
| 5. Secretary<br>0.20 FTE                    | \$5,784          |                                    |
| 6. Grant Management Personnel<br>0.05 FTE   | \$2,459          |                                    |
| 7. Fringe @ 29.5%                           | \$43,689         |                                    |
| 8. Overhead @ 35%                           | \$67,125         |                                    |
| 9. Contingency                              | \$1,879          |                                    |
| <b>Personnel Services Cost</b>              | <b>\$261,156</b> |                                    |

<sup>1</sup> Federal Fiscal Year

<sup>2</sup> Metro contributing 0.05 FTE, fringe and overhead (\$9,128) of senior management supervisory costs on this program.

**METRO'S BUDGET CONTINUED**  
**YEAR 2: FY 1995**

**Materials and Services Costs**

|       |  |                       |
|-------|--|-----------------------|
| 1.    | Contracted seismic risk assessment of approximately 17,000 non-residential buildings by Portland State University Civil Engineering Department | \$178,723             |
| 2.    | Contracted technical assistance for developing land use regulations for mitigating seismic risks   | \$10,000              |
| 3.    | Integration of building, lifeline system and critical facilities data files into Oregon Emergency Management information system                | \$10,000              |
| 4.    | Conference   | \$0 <sup>3</sup>      |
| 5.    | Computer lease   | \$41,000 <sup>4</sup> |
| 6.    | Printing, postage and meeting expenses   | \$9,971               |
| 7.    | Travel and training  | \$5,000               |
| <hr/> |  |                       |
|       | <b>Materials and Services Cost</b>   | <b>\$254,694</b>      |

**TOTAL ACTUAL BUDGET**

**\$515,850**

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May 4, 1995

<sup>3</sup> Metro will seek cosponsors to defray costs.

<sup>4</sup> Metro absorbing 58% (\$45,600) of computer hardware and software maintenance and administration.

Staff Report

**CONSIDERATION OF RESOLUTION NO. 95-2149 FOR THE RECEIVING OF  
FEDERAL GRANT THROUGH THE OREGON DEPARTMENT OF GEOLOGY AND  
MINERAL INDUSTRIES FOR IMPLEMENTING REGIONAL EARTHQUAKE  
HAZARDS IDENTIFICATION AND PREPAREDNESS PROGRAM**

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Date: May 15, 1995

Presented by: Andrew C. Cotugno

**FACTUAL BACKGROUND**

In early 1994, Metro and the Oregon Department of Geology and Mineral Industries (DOGAMI) jointly submitted a federal grant proposal to the Federal Emergency Management Agency (FEMA) and Congress requesting \$1 million to enable us expand the earthquake hazard identification and preparedness program in the Portland metropolitan region. Through the efforts of Senator Hatfield, \$950,000 of the original amount requested was approved. FEMA will disburse the money through DOGAMI.

The grant will enable DOGAMI to initiate Phase 3 of the project and identify geologic hazards in the remaining 12 quadrangles at the periphery of the Metro boundary (see attached map).

Metro will use its portion of the grant to complete Phase 2 of the project and assess buildings for structural hazards, inventory lifelines and critical facilities such as electrical power, telecommunication, water, sewerage, natural gas, bridges, fire stations and major medical facilities in the five quadrangles adjacent to the Portland quadrangle.. The buildings and facilities data will be integrated into Metro's Regional Land Information System (RLIS). The buildings and facilities will also be mapped and overlain on the geologic hazard map.

Metro will also use its portion of the grant to estimate earthquake damage and loss in the five quadrangles, finalize the conceptual framework for developing model land use regulations for mitigating earthquake hazards, develop Disaster Mitigation, Response and Recovery Atlas, link Oregon Emergency Management information system to RLIS, conduct custom earthquake mitigation workshops, and work with emergency managers, private and public utility agencies to develop emergency transportation routes. The routes will be used to promote prioritization of mitigation projects in the region.

The products of these projects will support and enhance disaster preparedness activities in this region. Metro staff will continue to work closely with emergency planners, utility officials, Oregon Emergency Management, DOGAMI, Oregon Seismic Safety Advisory Policy Advisory commission, U.S. Geological Survey and FEMA to look for ways to use the geologic and non-geologic hazards information and maps to improve regional emergency preparedness and minimize the loss of property and life in the event of a major disaster.

Metro and DOGAMI staff developed an intergovernmental agreement that will enable Metro to receive the federal grant through DOGAMI. Tasks to be accomplished with the money by Metro are attached to the agreement.



### **BUDGET IMPACT**

The Planning Department has budget authority to accept and expend funds on this grant for the planned activities for this fiscal year. The grant is included in the approved budget for FY 1995-96.

Legal Counsel has reviewed the documents.

### **PROPOSED ACTION**

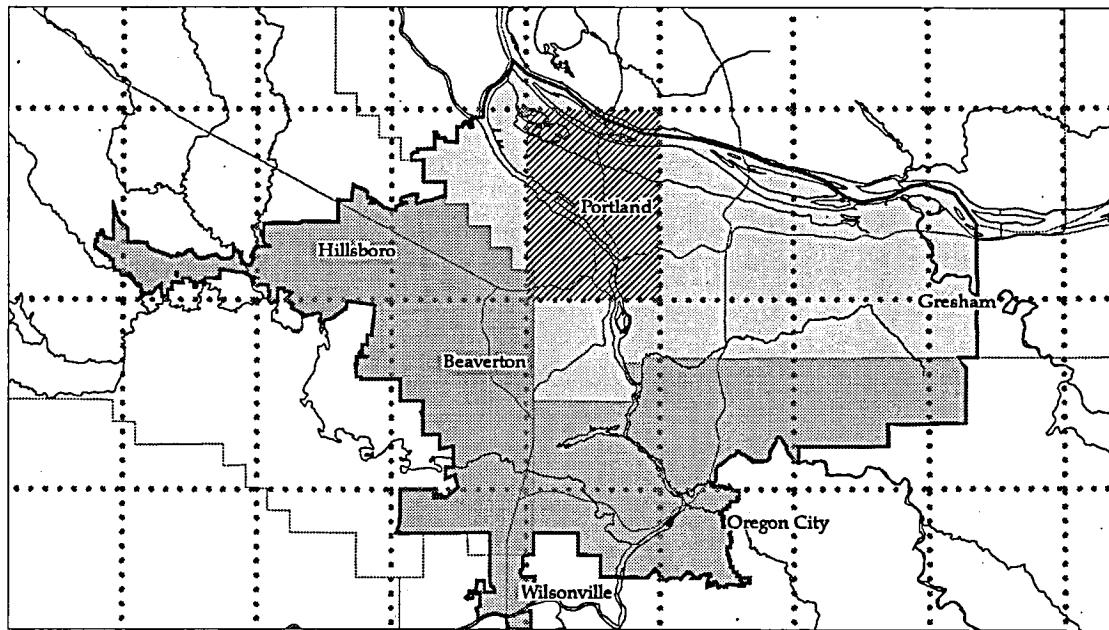
This resolution provides that the Metro Council approve the acceptance of FEMA grant through DOGAMI for the purpose of continuing work on the Regional Earthquake Hazard Identification and Preparedness Program.

### **EXECUTIVE OFFICER'S RECOMMENDATION**





The Executive Officer recommends approval of Resolution No. 95-2149.

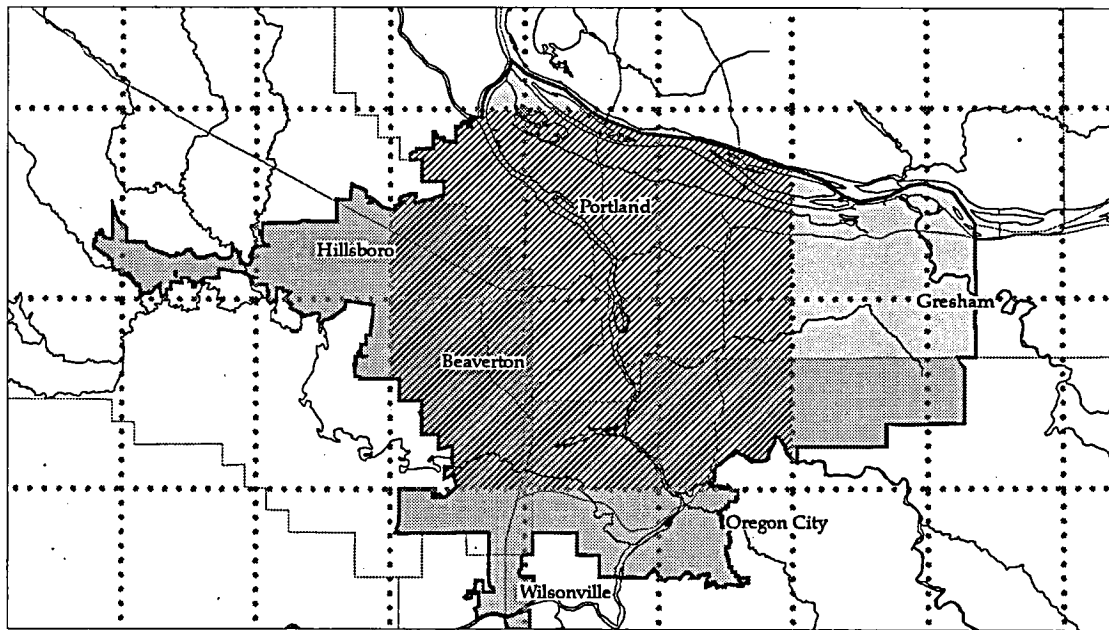
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# Regional Earthquake Hazard Data Collection and Mapping Schedule







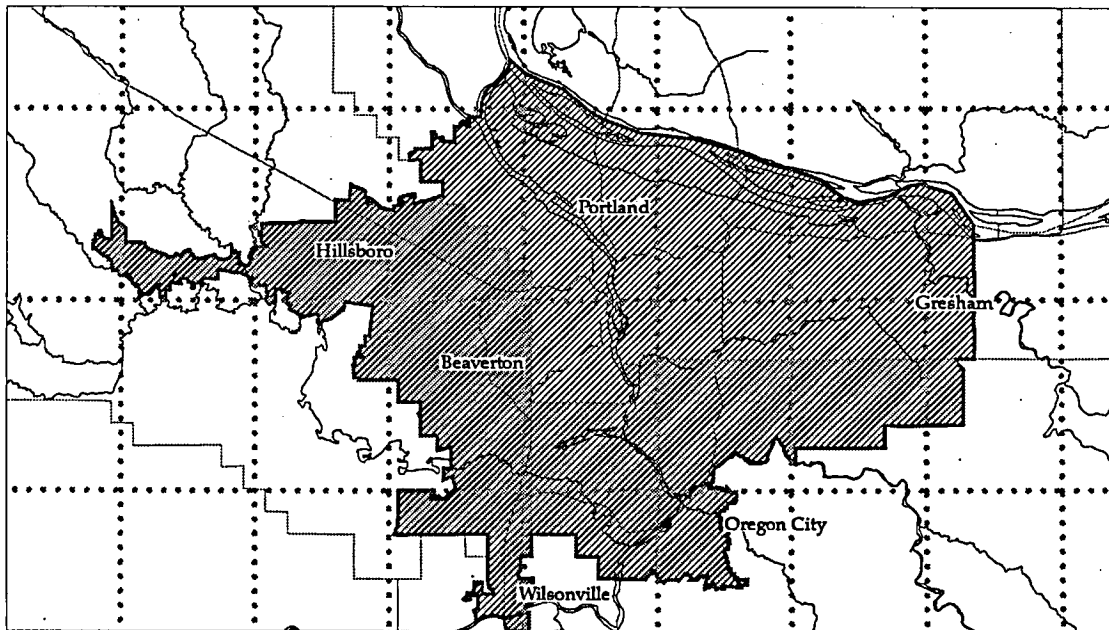
Phase 1  
1993/1994

-  Study Area for Phase 1
-  Quadrangle Boundaries
-  County Boundaries
-  Metro Boundary







Phase 2  
1995/1996

-  Study Area for Phase 2
-  Quadrangle Boundaries
-  County Boundaries
-  Metro Boundary



Phase 3  
1996/1997

-  Study Area for Phase 3
-  Quadrangle Boundaries
-  County Boundaries
-  Metro Boundary