Disaster & Emergency Management Activities in Turkey

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FIG Congress 2006

Geological Features of TURKEY

Tectonic Plate Motion of TURKEY (McClusky 2000)

GPS studies initiated in the Eastern Mediterranean region in early 1980's and provide valuable data for the slip vectors, velocities and rotational movements. By analyzing this data it is clearer now that the Anatolian plate squeezed by the Arabian plate is escaping towards the west along the North and Eastern Anatolian Faults and is expanding and rotating anticlockwise in the west forming the Aegean Graben System.

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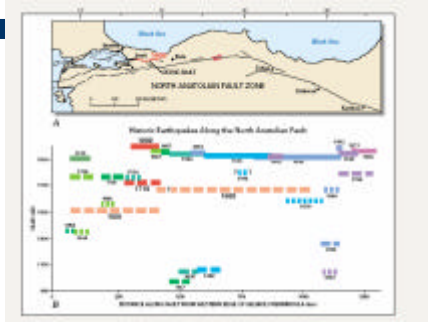
Historical earthquakes along the North Anatolian Fault



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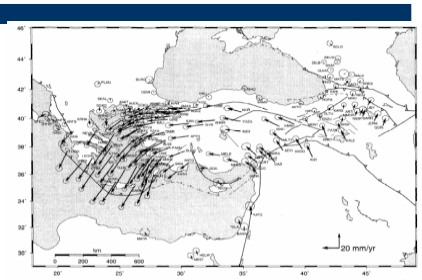
GPS VECTORS



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17 August & 12 November 1999 Earthquakes

17 August (M=7.4) and 12 November (M=7.2) 1999 earthquakes killed more than 20 000 people and ruptured about 160 km of the northern branch of the NAF.

These earthquakes have also located the Marmara segments of the fault and major (M=7.6) event is expected in the next half century with and about 50% probability on this segment.

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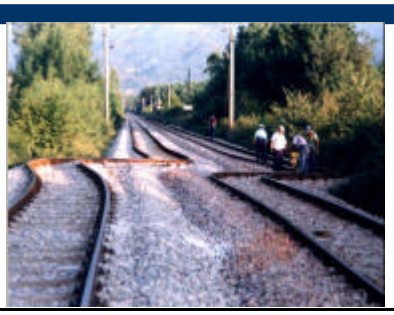
1999 Earthquakes



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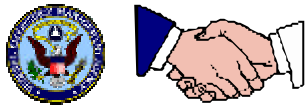
1999 Earthquakes

Just after 1999

Agreement between FEMA (USA) and ITU 2000



"**A** Cooperative **H**azard **I**mpact-reduction **E**ffort **V**ia **E**ducation – ACHIEVE"

14 FEMA BOOKS TRANSLATED INTO TURKISH

Next agrement between

ITU & Ministry of Interior of Turkey 2001

1. Training on Emergency Management
2. Development of Turkish Fire Brigades
3. Development of Emergency Management System
4. GIS standards based on Emergency Management

PROJECT GOAL of GIS STANDARDS

To develop National GIS standards for

- emergency planning & administration
- disaster management & damage estimation, and
- as a decision support system for central & local authorities (ministries and local administrative units) at other times.

PROJECT OUTPUTS

1. Workshop with local authorities in Turkey, April 2002
2. Workshop with private sector in Turkey, June 2002
3. International Symposium on GIS, September 2002 sponsored by FIG

Final Report was submitted to the Ministry in November 2002.

Istanbul Disaster Information System

Sponsored by the

State Planning Department of Turkey

for a period of 3 years

Istanbul Disaster Information System

The project is supported by

Istanbul Governor
Istanbul Metropolitan Municipality
Turkish Emergency Management Agency

Istanbul Disaster Information System

The Status of the Project

- **The system design ready**
- **System hardware infrastructure**
- **About to start collecting the data from the Municipality offices, and from the field if necessary.**

Development of An Earthquake Loss Estimation Tool

Sponsored by

- Istanbul Metropolitan Municipality
- Scientific & Technical Research Council of Turkey

Development of An Earthquake Loss Estimation Tool

Objectives

To reduce loss of life and property, and protect people and institutions from natural hazards by providing a tool for comprehensive, risk-based loss analysis to support the nation's programs in emergency management, mitigation, preparedness, response, and recovery.

The key objectives

- Develop an earthquake hazard characterization model for Turkey
- Develop vulnerability functions for infrastructure at risk
- Develop parameters for casualties, shelter needs and economic loss that reflect conditions in Turkey.

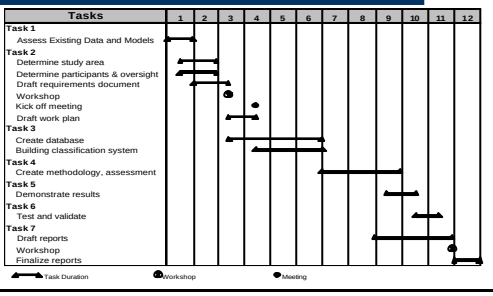
The key objectives

- Provide improved near real time loss assessment capability based on Turkish information resources.
- Provide software that takes full advantage of state-of-the-art GIS platforms.
- Provide user-friendly computer interface and support materials suitable for a wide variety of users in Turkey including emergency managers, scientific investigators and decision makers.

1st International Workshop

1st International Workshop

Demonstration Project Schedule



Status of the Project

Joint agreement between

Division of Surveying Techniques,
Istanbul Technical University
&
Mid-America Earthquake Research Center,
University of Illinois, Urbana Champaign

Istanbul Seismic Risk Mitigation & Emergency Preparedness Project (ISMEP)

PROJECT OBJECTIVE

The proposed project will initiate a process that aims at transforming Istanbul in the next 10-20 years into a city resilient to major earthquake. The overall goal of the proposed project is to save lives and reduce the social, economic and financial impacts in the event of future earthquakes.

Istanbul Seismic Risk Mitigation & Emergency Preparedness Project (ISMEP)

PROJECT OBJECTIVE

The specific objective of the project is to improve the city of Istanbul's preparedness for a potential earthquake through enhancing the institutional and technical capacity for disaster management and emergency response, strengthening critical public facilities for earthquake resistance, and supporting measures for better enforcement of building codes and land use plans.

ISMEP Components

Component A: Enhancing Emergency Preparedness.

This component will enhance the effectiveness and capacity of the provincial and municipal public safety organizations in Istanbul to prepare for, respond to and recover from significant emergencies, especially those arising from earthquakes.

ISMEP Components

Component B: Seismic Risk Mitigation for Public Facilities.

This component will reduce the risk of future earthquake damage to critical facilities in order to save lives and ensure their continued functioning in the event of an earthquake, through retrofitting of hospitals, schools and other priority public facilities.

ISMEP Components

Component C: Enforcement of Building Codes.

This component will support innovative approaches to better enforcement of building code and compliance with land use plans.

ISMEP Components

Component D: Project Management

This component will support the Istanbul Provincial Administration to implement the project in efficient and transparent manner, and build the institutional capacity to sustain the implementation of Seismic Risk Mitigation and Preparedness program beyond the life of the project.

ISMEP Status

Feasibility studies were initiated last year.

- Emergency Communication systems
- Disaster Management Information Systems
- Improvement of Emergency Response Capability
- Pilot Project for Strengthening Public Buildings (39 schools, 12 University Hospitals, 1 Student Dormitory, 2 Search & Rescue Buildings)
- Bakirköy Province Pilot Project for Strengthening Residences (350 buildings)
- Social Tendency Survey for Residence Strengthening

ISMEP Status

By the end of this year, we hope that we will have the application projects of the ISMEP.

With the hope that
Disasters do not turn into Catastrophes

in all parts of the World