Building Specific Loss Modeling

Mary C. Comerio, Coordinator
University of California, Berkeley

2001 PEER Annual Meeting

Building Specific Loss Modeling

- Eight Projects in Thrust Areas 1 and 3
  - A. Ang, UC Irvine
  - J. Beck, Caltech
  - M. Comerio, UC Berkley
  - J. Ellwood, UC Berkeley
  - L. Lowes, U. Washington
  - J. Meszaros, U. Washington
  - E. Miranda, Stanford
  - S. Wilke, Caltech

Building Specific Loss Modeling

- J. Beck: TA3
- Reliability Based Methodology for Assessing Engineering and Economic Performance
  - Improve Simulation Based Algorithms
  - Model Design Assessment for Engineering and Economic Performance

Building Specific Loss Modeling

- M. Comerio: TA 1
- Nonstructural Loss Estimation: Case Study
  - Describe Nonstructural Conditions in Laboratories
    - Contents
    - Ceiling and Mechanical System
  - Propose Mitigation Measures
  - Evaluate Costs

Building Specific Loss Modeling

- J. Ellwood TA1:
- Decision Making About Performance Objectives
  - 1999-2000 Study of Seismic Decision Making at Four California Campuses
  - 2000-2001 Study of a Major State Government Agency (CAL Trans)

  - Co-PI's R. MacCoun, M. Comerio

Building Specific Loss Modeling

- L. Lowes: TA3
- Modeling of Structural Damage in Old RC Components
  - Develop Numerical Performance State Indicators of Components
  - Link Indices to Loss Estimation

Building Specific Loss Modeling

- J. Meszaros: TA1
- Organizational Decision Process for Earthquake Mitigation
  - Review Approaches by Institutions and Corporations
  - Evaluate Obstacles to Mitigation and PBEE

Building Specific Loss Modeling

- E. Miranda: TA 3
- Building Specific Loss Estimation
  - Describe the Seismic Performance of a Building Assembly
  - Assess Loss in Annual Dollar Losses
  - Case Study of the Van Nuys Holiday Inn
  - Input/Review by A. Ang

Building Specific Loss Modeling

- S. Wilke: TA 1
- Decision Theory Method of Valuing Losses
  - Incorporate Multiple Objectives of Investors, Owners, Insurers, Tenants, etc.
  - Establish a Market Mechanism to Coordinate Recovery Strategies
  - Evaluate Institutions To Use the Methodology
  - Test on Lifeline Utility Case

Building Specific Loss Modeling

- Engineering Projects Refine Understanding of Inputs to Loss Modeling
  - Beck, Ang, Lowes, Miranda
- Architectural Projects Expand Input to Overall Building Performance
  - Comerio, Miranda

Building Specific Loss Modeling

- Economic Projects Refine Cost Modeling
  - Beck, Comerio, Miranda, Wilke
- Policy Projects Expose Implementation Issues
  - Ellwood, Meszaros, Wilke

Building Specific Loss Modeling

- Overall Goals:
  - Refine Inputs to PBEE
  - Expand Understanding of Building Assemblies, Nonstructural Conditions and Contents on PBEE
  - Clarify Costs of PBEE
  - Understand and Overcome Impediments to Implementation of PBEE