Conference Agenda

Sunday, August 10

8:00 am — 12:00 Noon	**Pre-Conference Workshop: *ASCE Substation Structure Design Guide***
1:00 pm — 5:00 pm	**Pre-Conference Workshop: *Guide to Reliable Emergency Power***
1:00 pm — 5:00 pm	**Pre-Conference Workshop: *Acceptable Risk Processes for Natural and Manmade Hazards Affecting Lifelines***
1:00 pm — 5:00 pm	**Pre-Conference Workshop: *Seismic Vulnerability Screening of Water and Wastewater Facilities***
1:00 pm — 5:00 pm	**Pre-Conference Workshop: *Transportation Security 101***
3:00 pm — 6:00 pm	**Registration Open**
6:00 pm — 7:30 pm	**Welcome Reception**

Monday, August 11

7:00 am — 3:30 pm	**Registration Open**
8:15 am — 10:00 am	**Plenary Session I** *Welcome and Introductions by Conference Chair* *Speakers: Thomas O'Rourke, The World Trade Center Disaster and Lifeline Performance* *DougThiessen, Port of Long Beach* *Duke Award Presentation, Conference Chair*
10:00 am — 10:30 am	**Coffee Break in Exhibit Hall**
10:30 am — 12:00 Noon	**Plenary Session II** *Speakers: Craig Wingo, The American Lifelines Alliance and Homeland Security* *William Petak, Lifeline Mitigation Implementation: A Sociotechnical System Approach* *Le Val Lund, The Long Beach Earthquake of 1933, The 70th Anniversary*
12:00 Noon — 1:30 pm	**Conference Luncheon** *Speaker: Stacy Jones, Port of Los Angeles*
1:30 pm — 3:00 pm	**Concurrent Technical Sessions — Period 1**

Session I-A
Electrical Guidelines and Equipment Interaction

An Experimental Study On The Seismic Response Of Electrical Substation Equipment Interconnected By Flexible Conductors
Andre Filiatrault and Christopher Stearns

Seismic Displacement at Interconnection Points of Substation Equipment
Jean-Bernard Dastous and Andre Filiatrault

Issues and Guidance for IEEE 693 Equipment Qualification Tests
Anshel Schiff and Leon Kempner, Jr.

Interaction Between Electrical Substation Equipment Connected By Rigid Bus Slider
Junho Song, Armen Der Kiureghian, and Jerome L. Sackman

Seismic Evaluation of Rigid Bus Conductors
L. Kempner Jr., W. H. Mueller III, and N. J. Hutson

Session II-A
Transportation System Preparedness, Response and Recovery

Development of a Shakemap-Based, Earthquake Response System within Caltrans
David Wald, Philip A. Naecker, Cliff Roblee, and Loren Turner

Seismic Risk Assessment of Transportation System: Evaluation Immediately after Earthquake
Chin Hsiung Loh, Chun-Yu Lee, and Chin-Hsun Yeh

Development of a Handbook for Seismic Performance Testing of Bridge Piers
Jia-Dzwan Jerry Shen, W. Phillip Yen, and John O'Fallon

Operational Performance Seismic Design of Highway Bridges for 2500-Year Earthquake Using Proposed NCHRP Provisions
Bardia Emami and W. N. Marianos

Pushover Analysis of Bridge Intermediate Bents by Finite Segment Method
Jeffrey Ger and Phillip Yen

Session III-A
Retrofit and Policy Issues with the San Francisco Bay Area Rapid Transit System

BART Seismic Retrofit Program: Characterization of Design Ground Motions
J. Litehiser, N. Gregor, J. Marrone, F. Ostadan, and R. Youngs

Seismic Risk Analysis of the Bay Area Rapid Transit System
John Eidinger, Ed Matsuda, Tom Horton, and Ching Wu

Fragility Formulations for the BART System
Mark Salmon, James Wang, David Jones, and Ching Wu

Seismic Retrofit Concepts for BART Aerial Structures
Chip Mallare, Ed Matsuda, Bill Hughes, and Eric Fok

Seismic Assessment and Retrofit Concepts of the BART Transbay Tube
Ching Wu, Eric Fok, George Fotinos, Wen Tseng, and Gary Oberholtzer

3:00 pm — 3:30 pm	**Coffee Break in Exhibit Hall**

3:30 pm — 5:20 pm **Concurrent Technical Sessions — Period 2**

Session I-B
Lifeline Management and Policy Issues I

The Policy Legacies of California's Dam Safety Act of 1929
Robert Olson

Development of Disaster Management Equipment in India: A Way towards Resurgence
D. N. Sing and Vipin Shukla

Community Preparedness and Response Model for Protecting Infrastructures
Nassim Uddin, Dennis Engi, and A. Haque

Integrating Lifelines Engineering with Emergency Management: The New Zealand Approach
David Brundson and Noel Evans

Time and Space Restoration Process and Prediction of Recovery Period for Damaged Water Supply Systems Based on GIS Data of the 1995 Kobe Earthquake
Shiro Takada and Tatsuhiko Imanishi

Vulnerability of Energy Transmission Systems to an Earthquake in the Central and Eastern United States
John Nichols and James Beavers

Session II-B
Performance of Ports and Wharves

Analyzing the Seismic Performance of Wharves (Part 1: Structural Engineering Approach)
Wolfgang Roth, E. M. Dawson, M. Mehrain, and A. Sayegh

Analyzing the Seismic Performance of Wharves (Part 2: SSI Analysis with Nonlinear, Effective Stress Soil Models)
Wolfgang Roth and E. M. Dawson

Seattle Alaskan Way Seawall Emergency Earthquake Evaluation and Repair
Farhad Rowshanzamir, Dave Swanson, John Buswell, and Danielle Mageau

Container Wharf Upgrade and Seismic Strengthening Guidelines at the Port of Los Angeles
Peter Yin, Stacy Jones, and Max Weismair

Issues in the Development of a Simulation Model for Seismic Risk of Sea Ports
Dimitris Pachakis and Anne Kiremidjian

Session III-B
Lifeline Guidelines and Codes

The American Lifelines Alliance: Progress in the Developing Guidelines for Lifeline Systems Subjected to Natural and Man-Made Hazards
Doug Honegger, Edward Laatsch, and Timothy D. Sheckler

Seismic Design Standards and Guidelines of Steel and Concrete Liquid Storage Tanks
Lisa Wang

Simplified Models for Flexibly Supported Liquid Storage Tanks and Their Application to Eurocode 8 (Part 4)
J. Habenberger and Jochen Schwarz

Developing the First National Code for Gas Lifeline System in Iran: Possibilities and Challenges
Mahmood Hosseini

The American Lifelines Alliance Approach: Four Years of Progress and Future Directions
Ed Laatsch, Doug Honegger, and Timothy D. Sheckler

Improving Natural Gas Safety in Earthquakes—California Recommendations
Fred Turner and Doug Honegger

6:00 pm — 7:00 pm **No-Host Reception in Exhibit Hall**

Tuesday, August 12

7:00 am — 3:30 pm **Registration Open**

8:30 am — 10:00 am **Plenary Session III**
Speakers: William J Hall, Performance of the Trans-Alaska Pipeline in the November 3, 2002 Denali Fault Earthquake
Earthquake Engineering Research Centers' Lifeline Research Programs

10:00 am — 10:30 am **Coffee Break in Exhibit Hall**

10:30 am — 12:00 Noon **Concurrent Technical Sessions — Period 3**

Session I-C
Lifeline Management and Policy Issues II

Planning and Mitigating for Local Tsunami Effects
Jane Preuss

Earthquake Protection of Lifelines in Switzerland
Blaise Duvernay, Anne Eckhardt, and Kerstin Lang

Seismic Risk Assessment and Upgrade Strategy of Hospital-Lifeline Performance
Yasuko Kuwata and Shiro Takada

Managing the Earthquake Risk: Utah's Research and Implementation Efforts on Our Highway Infrastructure
Blaine D. Leonard

Development of Seismic Disaster Mitigation Master Plan for Asia-Pacific Regions through Implementation of Risk Management Framework
Hiromichi Higashihara

Session II-C
Lifeline Performance During Earthquakes

Lifeline Performance, El Salvador Earthquakes January 13 and February 13, 2001
Le Val Lund

Effects of Six Recent Earthquakes on Railroads
William Byers

Damage of Gas and Water Pipelines in Slope City, Kure, Due to the 2001 GEIYO Earthquake
Junichi Ueno and Shiro Takada

Performance of Corrugated Metal Pipe (CMP) Culverts During Past Earthquakes
Les Youd and Chris J. Beckman

Lifeline Damage from the January 26, 2001 Gujarat, India Earthquake
Curtis Edwards

Session III-C
Water and Waste Water Session – I

Economics of Seismic Retrofit of Water Distribution and Transmission Systems
John Eidinger

Seismic Reliability of Urban Buried Pipeline Network Systems
Yang Han and Sun Shaoping

Guidelines for Defining Natural Hazards Performance Objectives for Water Systems
W. P. Graf, C. E. Taylor, J. H. Wiggins, L. Lund, and T. Vol

Online Monitoring of Seismic Damage in a Water Delivery System
Jainwen Laing

Seismic Design and Retrofit of Piping Systems: Overview of a Recent ALA Report
George Antaki

Session IV-C
PEER Lifeline Research Program

Next Generation of Attenuation Models for Ground Motions
Brian Chiou

Surface Fault Rupture Modeling

A Design Ground Motion Library
Maury Power

Regional Liquefaction-Induced Deformation Mapping - A Pilot Project
Keith Knudsen

Joint Validation of Probabilistic Seismic Hazard Codes
Ivan Wong

12:00 Noon — 1:30 pm **Lunch on Own**

Conference Agenda

Tuesday, August 12

1:30 pm — 3:00 pm **Concurrent Technical Sessions — Period 4**

Session I-D
Post Earthquake Investigations

Participating in International Post-Earthquake Lifelines Investigation
Curtis Edwards and Anshel Schiff

Hospital Lifeline Response to the 1999 Izmit Turkey Earthquake
Mark Pickett

Obtaining the Emergency Transportation Network for Rescue and Relief Activities in Large Cities Based on the Life Loss Mitigation Criteria
Afshin Shariat Mohaymany, Mahmood Hosseini, and Hossein Motevalli Habibi

Performance of Yen-Feng Bridge During the 921 Taiwan Chi-Chi Earthquake
Kuo-Chun Chang, K. Y. Kuo, C. H. Lu, and K. Y. Liu

Effects of Infrastructure System Interdependencies on Post-Earthquake Service Restoration
Zehrz Cagnan and R. Davidson

Session II-D
The Trans-Alaska Pipeline and the 2002 Denali Fault Earthquake

Seismic Hazard Exposure for the Trans-Alaska Pipeline
Lloyd S. Cluff, Robert A.Page, D. Burton Slemmons, and C. B. Crouse

Effect of the Denali Fault Rupture on the Trans-Alaska Pipeline
Steve P. Sorensen and Keith J. Meyer

Response of the Above-Ground Trans-Alaska Pipeline to the Magnitude 7.9 Denali Fault Earthquake
Steve P. Sorensen, Keith J. Meyer, Paul A. Carson, and William J. Hall

Assessment of the Below-Ground Trans-Alaska Pipeline Following the Magnitude 7.9 Denali Fault Earthquake
Elden R. Johnson, Michael C. Metz, and David A. Hackney

Trans-Alaska Pipeline Emergency Response and Recovery Following the November 3, 2002 Denali Fault Earthquake
Douglas J. Nyman, Elden R. Johnson, and Christopher H. Roach

Session III-D
Water and Waste Water II

Evaluating Mitigation of Urban Infrastructure Systems: Application to the Los Angeles Department of Water & Power
Stephanie Chang and Hope A. Seligson

URamP (Utilities Regional Assessment of Mitigation Priorities) — A Benefit-Cost Analysis Tool for Water, Wastewater and Drainage Utilities: Software
Charles Huyck, Ronald T. Eguchi, Reid M. Watkins, Hope A. Seligson, Stephen Bucknam, and Edward Bortugno

URamP (Utilities Regional Assessment of Mitigation Priorities) — A Benefit-Cost Analysis Tool for Water, Wastewater & Drainage Utilities: Methodology
Hope Seligson, Donald B. Ballantyne, Charles K. Huyck, Ronald T. Eguchi, Stephen Bucknam, and Edward Bortugno

Standard Guidelines to Assess the Seismic Fragility of Water Transmission Systems
Ron Eguchi and Doug Honegger

Comparison of Mitigation Alternatives for Water Distribution Pipelines Installed in Liquefiable Soils
Don Ballantyne and William Heubach

3:00 pm — 3:30 pm **Coffee Break in Exhibit Hall**

3:30 pm — 5:00 pm **Concurrent Technical Sessions — Period 5**

Session I-E
Performance of Electrical Equipment

SERA II
Dennis Ostrom

Seismic Design of Secondary Systems
Tarek Aziz

Seismic Response of Voltage Transformers
Howard Matt and Andre Filiatrault

Interpretation and Application of Hilbert Huang Transform for Seismic Performance Analyses
J. Jerry Shen, W. Phillip Yen, and John O'Fallon

Session II-E
Soil Modeling and Soil-Structure Interaction

Large-Displacement Soil-Structure Interaction Facility for Lifeline Systems
S.L. Jones, T. D. O'Rourke, H. E. Stewart, and S. L. Billington

Dynamic Earth Pressures for Structural Design
Russell Green, C. Guney Olgun, Robert M. Ebeling, and Wanda I. Cameron

A Simplified Two Dimensional Soil Model for New Madrid Seismic Zone
Wei Zheng and Ronaldo Luna

Pipe-Soil Interaction during Transverse Permanent Ground Deformation
Moon Kyum Kim, Yunmook Lim, TaeWook Kim, and SungHee Chang

Modeling of Unbounded Domain in Seismic Soil-Pile-Structure Interaction
Dongmei Chu and Kevin Z. Truman

Session III-E
Design, Mitigation and Performance of Underground Pipelines

Numerical Simulation of the Behaviour of Buried Jointed Pipelines under Extremely Large Fault Displacements
Radan Ivanov and Shiro Takada

Southern Loop Pipeline – Seismic Installation in Today's Urban Environment
Tom Shastid, Javier Prospero and, John Eidinger

Pipeline Seismic Mitigation Using Trenchless Technology
Le Val Lund

Considerations for the Design of Buried Natural Gas and Liquid Hydrocarbon Pipeline Fault Crossings
Douglass J. Nyman, Dougless G. Honneger, and Paul C. Thenhaus

Centrifuge Modeling of Buried Pipelines
Michael O'Rourke, Vikram Gadicherla, and Tarek Abdoun

6:00 pm — 10:00 pm **Reception and Banquet Aboard the Queen Mary**

Port of Long Beach Harbor Tour

Wednesday, August 13, 1:30 pm – 3:00 pm

Explore the Port of Long Beach from the vantage point of a boat. This special tour is sponsored by the Port of Long Beach and will feature an expert tour guide. He'll point out facilities of interest — including oil tanks, cranes, new berths, old berths, ships, and others — for the one of the two largest ports in the U.S. In addition, there should be engineers on board who know port facilities in detail, including its seismic practices. The tour is limited to 100. The tour fee is $20. Please use the registration form on page 11 to register.

Wednesday, August 13

7:00 am — 3:30 pm — **Registration Open**

8:30 am — 10:00 am — **Concurrent Technical Sessions — Period 6**

Session I-F
Seismic Hazard and Risk Issues I

Modeling of Phase Spectra for Simulation of Near-Fault Desigh Earthquake Motions
T. Sato, Y. Murono and M. Murakami

The Role of Urban Planning and Design in Lifeline-Related Seismic Risk Mitigation
Mahmood Hosseini and Leila Niazi Shemirani

Earthquake and Terrorism Risk Assessment: Similarities and Differences
Stephanie King, Hamid R. Adib, John Drobny, and James Bechanan

Prevention and Repair Measures for Infrastructure Natural Disaster Risk Management
Jacob Greenstein

Session II-F
Performance of Electrical Power Systems

Seismic Upgrading Support System for Electric Power Facilities: Discussion of Reasonable Seismic System Performance Level of Electric Power System
Yoshiharu Shumuta

A Comparison of Seismic (Dynamic) and Static Load Cases for Lattice High-Voltage Electric Transmission Towers
Michael J. Riley, Leon Kempner Jr., and Wendelin H. Mueller III

Simplified Seismic Calculation Method for the Coupled System of Transmission Lines and Their Supporting Tower
Hong-Nan Li, Wen Long Shi, and Su-Yan Wang

Development of a Probabilistic Assessment Model for Post-Earthquake Residual Capacity of Utility Lifeline Systems
Nobuto Nojima and Masata Sugito

Session III-F
Seismic Risk Analysis of Highway Systems - Session I

Current Developments and Future Directions for Seismic Risk Analysis of Highway-Roadway Systems
Stuart D. Werner

Earthquake Occurrence Modeling for Evaluating Seismic Risks to Roadway Systems
David Perkins and Craig Taylor

Modeling Transportation Network Flows as a Simultaneous Function of Travel Demand, Earthquake Damage, and Level Service
Sungbin Cho, Yue Yue Fan, and Jim Moore

A Validation Study of the REDARS Earthquake Loss Estimation Software Program
Sungbin Cho, Charles Huyck, Shubharoop Ghosh, and Ron Eguchi

Application of Seismic Risk Assessment Procedures to the Performance-Based Design of Highway Systems
Ian Buckle

10:00 am — 10:30 am — **Coffee Break in Exhibit Hall**

10:30 am — 12:00 Noon — **Concurrent Technical Sessions — Period 7**

Session I-G
Seismic Hazard and Risk Issues II

Regional Assessment of Earthquake Hazard in Japan (Part1)
Takayuki Shimazu, Haruki Shimazu, and Naoki Shimazu

Regional Assessment of Earthquake Hazard in Japan (Part 2)
Takayuki Shimazu, Naoki Shimazu, and Haruki Shimazu

Quantitative Method for Developing Hazard-Consistent Earthquake Scenarios
Ken Champbell and Hope Seligson

Seismic Hazard Analysis and Developing the Uniform Spectra for an Existing Railway Bridge
Fariborz Yaghoobi Vayeghan, Maryam Firoozi Nezamabadi, and Mahmood Hosseini

Session II-G
Seismic Risk Analysis of Highway Systems Session – II

Relating Micro and Macro Approaches to the Study of Transportation Network Vulnerability to Earthquakes
Joe Sussman

The PEER Highway Demonstration Project
Anne Kiremidjian

Fragility Curves for Concrete Bridges Retrofitted by Column Jacketing and Restrainers
Sang-hoon Kim and Masanoba Shinozuka

Road Reliability Estimation Based on an Analysis of Post-Earthquake Traffic Demand and Road Capacity
Chen Yanyan and Ronald T. Eguchi

A GIS-Based Emergency Response System for Transportation Networks
Nesrin Basoz

Session III-G
Geotechnical and Liquefaction Lifeline Issues

Ground Improvement Effectiveness for Liquefaction Mitigation at an Existing Highway Bridge
Harry Cooke and James K. Mitchell

Lateral Seismic Pressures for Design of Rigid Underground Structures
Craig Davis

Characterizing the Effects of Pile Foundations for Evaluation of Performance Based Seismic Design of Critical Lifeline Structures
W.D. Liam Finn, N. Fujita, and T. Thavaraj

Investigation and Analysis of Apparent Liquefaction of Silty Clay Soil in Wufeng, Taiwan
Jonathan Stewart, Daniel B. Chu, Shanon Lee, J.S. Tsai, P. S. Lin, B. L. Chu, Robb E. S. Moss, Raymond B. Seed, S. C. Hsau, M. S. Yu, and Mark C. H. Wang

Session IV-G
Innovative Mitigation of Bridges

Performance of Viscous Dampers and its Acceptance Criteria
Li-Hong Sheng and Don Lee

Impact of Friction Pendulum Bearings on the Seismic Retrofitting Cost of Typical Bridges with Wall Type Piers in the State of Illinois
Murat Diclei, Mouhamad Y. Mansour, Anoop Mokha, Victor Zayas, and Michael C. Constantinou

Development and Analysis of Composite Steel-Concrete Girder for Bridge Retrofit
Yuping Cui, Shi Zhongzhu, and Sun Shaoping

Seismic Fragility Curves for Bridges: A Tool for Retrofit Prioritization
Reginald DesRoches and Bryant Nielson

12:00 Noon — 12:20 pm — **Closing of TCLEE 2003**

1:30 pm — 3:00 pm — **Port of Long Beach Harbor Tour**

Thursday, August 14

8:30 am — 5:00 pm — **Pre-Conference Workshop: *Terrorism Planning for Lifelines***