



# City and County of SAN FRANCISCO LIFELINES COUNCIL



Gavin Newsom, Mayor  
Edwin M. Lee, City Administrator

Thursday, December 9, 2010  
3:00 PM - 5:00 PM  
City Hall, Room 305

*Lifelines are the systems and facilities that provide services vital to the function of an industrialized society and important to the emergency response and recovery after a natural disaster. These systems and facilities include communication, electric power, liquid fuel, natural gas, transportation (airports, highways, ports, rail and transit), water, and wastewater.*  
- American Society of Civil Engineering Technical Council on Lifeline Earthquake Engineering (TCLEE), 2009

## CO-CHAIRS

**Edwin Lee**  
City and County of San Francisco  
City Administrator  
General Services Agency

**Chris Poland**  
Chair, NEHRP ACEHR  
Co-Chair, SPUR Resilient Cities Initiative  
CEO, Degenkolb Engineers

## REPRESENTED AGENCIES

AT&T  
BART  
CalTel  
CalTrans  
Department of Emergency Management  
FEMA  
General Services Agency  
Golden Gate Transportation District  
Human Services Agency

Office of the City Administrator  
PG&E  
Port of San Francisco  
San Francisco Airport  
San Francisco Department of Public Works  
San Francisco Fire Department

San Francisco Municipal Transportation Authority  
San Francisco Risk Management Division  
San Francisco Public Utilities Commission  
SPUR  
Water Emergency Transportation Authority

## MEETING #4 NOTES

### 1) *Welcome and Introductions*

*Ed Lee and Chris Poland, Co-Chairs*

*Opening remarks by Ed Lee, City Administrator  
Round table introduction of all participants*

### 2) *Review of Previous Meetings*

*Chris Poland, Co-Chair*

Co-Chair Chris Poland provided an overview of the three previous meetings:

- Meeting #1 featured an San Francisco Public Utilities Commission lifeline capacity presentation
- Meeting #2 featured Harvard Kennedy School “Acting in Time Against Landscape-Scale Disasters” presentation on post-disaster recovery based on the “tipping point” theory and a PG&E “Interdependency Case Study”
- Meeting #3 featured a presentation on the performance of lifelines during the 2010 Chile earthquake by Laurie Johnson, Ph.D., and an AT&T case study on telecommunications capabilities in disasters.

Copies of presentations “Acting in Time Against Landscape-Scale Disasters” by the Harvard Kennedy School, “Interdependency Case Study” by PG&E, “Performance of Lifelines in

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Chile” by Laurie Johnson, Ph.D., and “Case Study – Telecommunications” by AT&T are available upon request.

The notes of the first two meeting are finalized and include information on the background and goals of the Lifelines Council. Comments on the Meeting #3 notes should be directed to Heidi Sieck, GSA at [heidi.sieck@sfgov.org](mailto:heidi.sieck@sfgov.org)

### **3) *Introduction of ResilientSF: Citywide Resilience Initiative* Heidi Sieck, PMP Program Director**

Heidi Sieck, Program Director, provided an overview of the ResilientSF Initiative.

Based on the successful Citywide Post-Disaster Resilience and Recovery Initiative that launched the Lifelines Council, the purpose of the ResilientSF is to create a comprehensive citywide initiative that establishes true resilience through operational implementation and community engagement. ResilientSF is intended to be a comprehensive program with four aspects:

1. *Vision* – establish a clear, best practice guideline for the definition and implementation of resilience in San Francisco.
2. *Management Plan* – a comprehensive strategic program plan that serves as the citywide resiliency roadmap.
3. *Network* – people, relationships and resources that support program plan implementation and embody the principles of resilience.
4. *Community Touch Points and Tools* –branded resources to promote resiliency concepts and support citizens.

ResilientSF is a partnership between the General Service Agency, Department of Emergency Management and Office of the Controller. The 2011 ResilientSF priorities include:

- ResilientSF program structure development
- All Hazards Strategic Plan update
- Resilient Communities Initiative
- Launch Earthquake Safety Implementation Committee (ESIC), a continuation of the Community Action Plan for Seismic Safety (CAPSS) program.
- Lifelines Council Interdependency Analysis
- Housing Project
- Post-Disaster Recovery Governance Project
- Community Safety Element Update
- Cost Recovery, Finance and Risk Management Program

For more information, contact Heidi Sieck, Program Director at [heidi.sieck@sfgov.org](mailto:heidi.sieck@sfgov.org).

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**4) *Transportation and Rebuilding***  
***Bay Area Transportation System Overview***  
***SPUR Resilient City Report***

***Anthony Bruzzone, ARUP***  
***Christopher Barkley, URS Corp***  
***Irene Avetyan, URS Corp***  
***Brian Stokle, Nelson Nygaard***  
***Sarah Karlinsky, SPUR***

The SPUR Transportation and Rebuilding Taskforce is part of the SPUR Resilient City Policy Initiative collaboration of planners and transportation experts who draw from their professional experience, education, and existing data to create a comprehensive prediction of transportation disruption and potential solutions for post-disaster recovery.

The presentation outlines SPUR's *After the Disaster* paper focusing on transportation. The paper proposes a plan to rebuild quickly and effectively after the disaster, while increasing our resiliency in the process.

The scope of the transportation analysis is limited in the following four important ways:

1. It only addresses the physical infrastructure of our transportation system—it does not address the human resources needed to operate and manage our transportation infrastructure.
2. It does not include a financial analysis of what it would cost to both retrofit our transportation infrastructure before the disaster and rebuilding our transportation infrastructure after the disaster.
3. It does not include a socio-economic analysis to determine where the most vulnerable populations are within our region and how to serve those populations in both the near and long term rebuilding process.
4. It does not address freight movement.

SPUR planning assumptions:

- Maximum Considered Earthquake (MCE) on Hayward fault: 6.9 moment magnitude and MCE on San Andreas fault: 7.9 moment magnitude scale and a USGS liquefaction map
- Possible disruptions include road surface disruptions, transportation and power system failure, damage to maintenance facilities, and damage to airport runways

The Transportation and Rebuilding report looks at the following transportation links to Downtown San Francisco:

- East Bay – San Francisco
- North Bay – San Francisco
- South Bay/Peninsula – San Francisco
- Intra-San Francisco
- Water transportation
- Non-corridor-specific transportation

For full details see the following links:

SPUR Resilient City Policy Initiative: <http://www.spur.org/policy/the-resilient-city>

SPUR Transportation Report: [http://www.spur.org/publications/library/report/after\\_disaster](http://www.spur.org/publications/library/report/after_disaster)

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## Questions and Answers

*Q (BART): How are the earthquake scenarios determined along the Hayward and San Andreas faults?*

A (Barkley, URS): Several assumptions used for various planning topics, measurements are derived from USGS findings. Transportation planning is based on Maximum Considered Earthquake (MEC)

A (Poland, Degenkolb Engineers): The Design-Base Earthquake is determined using advanced work from the professional seismology community, 100 years of recording seismology and more data using trenching and GPS-based thermal imaging, as well as aftershocks. Aftershocks trigger each other – increased seismic activity observed using GPS monitoring to identify areas most likely to rupture. The timeline and intensity of earthquakes can be identified with a degree of accuracy. The Hayward fault and southern San Andreas faults are most likely rupture points at this time.

*Q (Chakos): What are the recommendations for connecting with regional transit authorities when planning for a disaster, and implementing said plan post-disaster?*

*Note:* SPUR has conducted interviews and research from transit operator sources to form its recommendations.

A (BART): The Transbay tube and SFO extension corridors are designed for an 8.0+ magnitude event and have mounted robust retrofits based on advanced planning. BART has additional contingency plans to handle service interruptions with non-rail vehicles.

A (Barkley): Many transportation agencies work on disaster planning together via bodies formed by FEMA funding.

A (CalTrans): Contraflow is instituted and managed by CHP – they are incident commander and they decide when and for how long. Implementing contraflow is very labor-intensive in this region and it is best if contraflow is instituted for long periods at a time. Repairs and retrofits to bridges and overpasses are made based on regional needs. The design standard is serviceable during 1000-year-occurrence earthquake.

*Q, Poland: What is the prediction for the performance of bridges in an earthquake?*

A: CalTrans: The bridges are anticipated to perform without service interruption. The goal of the seismic retrofits done on the bridges and overpasses was to ensure that in case of a major earthquake the damage will not disable the use of the bridges. The retrofits were initiated in 1971, with 200-300 bridge columns retrofitted after Loma Prieta. All bridges in the Bay Area except the Dumbarton and Antioch bridges are retrofitted or retrofits are in progress. Contracts have been initiated for the Dumbarton and Antioch bridges and work will begin soon.

*Q: Who makes the decisions in an event affecting regional transportation?*

CalTrans: The current regional emergency transportation plan alludes to a council of MTC, FEMA, CalEMA, and other regional partners for decision making purposes. The council will help to identify who law enforcement agencies should allow through a check-point. There is an upcoming executive-level workshop with MTC, CHP, WETA, CalTrans, and other agencies to discuss future of a regional emergency mobility plan, which would be implemented in the REOC transit branch. The scope of the plan covers a 60-day window which spans both response and the initial period of recovery. (*Note: the plan does not have a formal name yet, “emergency mobility plan” used for identification purposes only.*)

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Closing note on topic from Sarah Karlinsky: SPUR asks for comments and feedback on the SPUR transportation studies from transit agencies.

Closing note from Ed Lee: The Lifeline Council hopes that the emergency plans of the lifeline and utility providers will reflect this regional information. The Lifelines Council vision is to develop a shared priority route plan in order to accelerate post-disaster recovery.

## **5) San Francisco Priority Route Program**

***Ed Reiskin, Director SFDPW***

The City Priority Route Program is based on available DPW priority route map and ongoing project review. Mr. Reiskin distributed a priority route map to the participants.

The program relies on adequate street redundancy and current department best practices. The distributed map contains the designated routes, key city assets, roadway infrastructure (bridges, tunnels, overpasses) and is currently used as priority damage assessment routes

The Priority Route Program recognizes the need to enable lifelines partners to have access to their critical systems and infrastructure - i.e. power nodes, transmission infrastructure, pumps, telecom stations, etc. The City seeks to build a stronger partnership with other transportation agencies and lifelines providers to review and validate the routes; expand the routes to fit their needs and their critical infrastructure; mitigate delays in service with adequate redundancy. This is a critical project in the ongoing success of the Lifelines Council.

*Q, Michael Carlin, SFPUC: Can there be a formal confidentiality agreement between partners in order to share information without security issues?*

A, Ed Reiskin, Ed Lee: The aim of the Lifelines Council is to help advance the sharing of information including confidential information of critical facilities. The expert opinion of emergency management agencies is that information sharing can expedite the recovery process. The Co-Chairs will ask the City Attorney's office to help with a confidentiality agreement for City agencies.

## **6) Interdependency Analysis**

***Chris Poland, Co-Chair***

The eventual goal of the Lifelines Council is to build a workable understanding of system interdependencies to ensure expedited recovery.

Chris Poland posed a question to the present agencies whether they are doing any interdependency analyses as part of their planning. The SFPUC has done some scenario planning involving dependencies on other agencies. The report contains proprietary information but the SFPUC is willing to share portions of the report and the policies that have come from it.

*Q, Poland: Any thoughts or comments on where partners may need the City's assistance?*

*Note:* Barkley, URS, suggested that due to the complexity of the topic, the next meeting should be structured around interdependency analysis, and is available to help develop a formal report on interdependency.

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A, AT&T: Credentialing is a constant issue when planning for service restoration and recovery. It's important to have consistent credentialing for personnel required to work in recovery across the State – which may make it a project for an agency like CalEMA to take on – because transportation, telecommunication, and other lifeline recovery generally transcends jurisdictional borders.

*Note:* Barkley, URS, agrees that CalEMA is the appropriate agency to handle this issue; however, in the past they have been unable to take it on. They are looking into the issue continuously.

*Note:* Poland suggest they will be more likely to take it on with the new state leadership and if they see this as an elevated priority for all the local jurisdictions– other CA cities need to recognize this as a priority. We may create a subgroup to work on credentialing initiative.

A, Lee: The Lifelines Council will make a formal request to CalEMA to explore the credentialing issue.

*Q, Poland: What are the interdependencies of electricity and gas providers (PG&E)?*

A, PG&E: PG&E will put together an answer for this question for the following Lifelines Council meeting. PG&E has their own recovery priority list.

*Note:* Poland: The timeline for restoring the City's workforce to optimize recovery is 30 days, so restoring the neighborhoods is a priority for the City.

There are tools available for studying interdependencies without requiring lifeline providers to disclose sensitive information. Using a tool can help with confidentiality issues. The Lifelines Council Co-Chairs will explore these tools further for our next meeting.

## **7) Adjourn**

Meetings will continue on a quarterly basis. The next meeting is targeted for March 2011 with an emphasis on interdependency analysis.

Tasks based on December 2010 meeting have been identified as:

- Priority routes program
- confidentiality agreement
- credentialing
- interdependency analysis tools