



City and County of San Francisco LIFELINES COUNCIL

Thursday, September 6, 2012

2:00 PM – 4:00 PM

San Francisco City Hall, Room 201



Edwin Lee, Mayor

Naomi Kelly, City Administrator

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

MEETING NOTES

Meeting #9 – Developing the Lifelines Council Work Program

CO-CHAIRS

Naomi Kelly
City and County of San Francisco
City Administrator
General Services Agency

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

REPRESENTED AGENCIES

AT&T
BART
BRMA
California Resiliency Alliance
Caltrain
Caltrans
Comcast
Degenkolb Engineers
Laurie Johnson Consulting

Office of the City Administrator
Office of the Mayor
PG&E
San Francisco Capital Planning Program
San Francisco Department of Emergency
Management
San Francisco Department of Public
Works

San Francisco Municipal Transportation
Agency
San Francisco Public Utilities
Commission
San Francisco Risk Management Division
SPUR
URS Corp
Verizon Wireless

1) Welcome and Introductions

Naomi Kelly and Chris Poland, Co-Chairs

Co-Chairs Naomi Kelly and Chris Poland welcomed the group with a short overview of the background and objectives of the Lifelines Council, as well as summary of recent meetings. Mr. Poland discussed the Council’s near-term goals for completing the Lifelines Interdependency Study in early 2013, and to develop a more collaborative and interactive work program for the Lifelines Council in 2013-2014. He stated the focus of today’s meeting is to gather input from Council members on topics that are important to each individual agency and which members recommend as potential topics for the Lifelines Council’s work program for the next year.

To start off this conversation, the Co-Chairs proposed revisiting the recommendations of the 2009 “Resilient City” policy paper produced by SPUR (San Francisco Planning and Urban Research Association) outlining what San Francisco had to do to improve the resilience of its buildings and lifelines to withstand a major earthquake. The first recommendation in the Lifelines section of the SPUR “Resilient City” report is to “Establish a ‘Lifelines Council’ to:

1. Provide a mechanism for comprehensive planning among the lifeline operators in the City and County of San Francisco to improve coordination and restoration following an earthquake.

The report then further recommends that the Council undertake the following actions:

-
2. Establish standards for resilience in cooperation with the lifeline providers on how all systems should perform in an “expected earthquake”
 3. Conduct a seismic performance audit of lifelines and establish priorities for mitigation. It was recommended that the Lifelines Council present the results of the study to the Board of Supervisors and City's Capital Planning Committee.
 4. Require improvements to City-owned and regulated systems (such as the water and wastewater systems, port, airport and Muni) necessary to meet system-specific performance goals and develop a funding program to make those improvements happen
 5. Require the design and implementation of improvements to the gas distribution system that reduce the risk of post-earthquake ignitions and other secondary impacts without compromising the continued operation of the system after earthquakes
 6. Establish partnerships with regional, state and private sector entities to address multijurisdictional and regional systems that serve the Bay Area.
 7. Establish a program for communications and outreach to regional, state, federal and private sector entities to drive change that are in the City's self-interest while at the same time setting the standard for a comprehensive approach to addressing lifeline performance. This is particularly important in helping raise public awareness and advocate for the needs of the non-regulated lifeline systems operating in San Francisco.

Mr. Poland proposed that, during its first 3 years, much of the work of the Lifelines Council has been focused on the first 3 of these recommendations with an emphasis on planning issues and (through the interdependency study) auditing the expected performance of our systems. He also reviewed the set of citywide recovery targets (or performance standards) proposed by the SPUR Resilient City Initiative for buildings and infrastructure following an “expected earthquake” (a magnitude 7.2 earthquake on the Peninsula segment of the San Andreas Fault).

- First for critical response facilities, SPUR recommended lifeline performances standards such that a 100% of service levels would be resumed within 4 hours.
- For housing and neighborhood infrastructure, standards of 90% service restoration with 72 hours, 95% within 30 days, and 100% within 4 months were proposed.
- And, for the balance of the city, it was assumed that systems would be restored as buildings were repaired and returned to operations and so standards of 90% service restoration with 72 hours, 95% within 30 days and 100% within 3 years (36 months) were established.

He explained that the SPUR Resilient Committee also tried to give some perspective on the current expected performance of these systems (shown as “x”es on the SPUR graphic), which in nearly all cases was much worse than the recommended performance standards. He also showed some examples of what these recovery targets might actually mean for different lifelines providers. For example, to achieve a 100% service level at critical facilities, normal or temporary supplies of water and power need to be provided, firefighting water services should be available to 100% of the city’s neighborhoods, and immediate control of the natural gas system with a “smart” shut-off to areas with hazardous conditions are recommended.

Council members discussed the SPUR document and the proposed resilient standards. Concerns were expressed as to whether the targeted states of recovery were achievable, even over the 30-year timeline as recommended by SPUR. Questions were also raised as to whether the targets take into account the status of passable roads, debris removal and coordination of primary transportation arteries? Mr. Poland closed by stating that these questions were exactly the kinds of questions that the Council should be asking and that they were also very relevant to the next presentation by Dr. Laurie Johnson on the status of the lifelines interdependency

study since one of the main purposes of that study is to develop a more comprehensive earthquake scenario which integrates the expected performance of different lifeline systems and will help us to refine the SPUR performance expectations and set collective standards of our own.

2) Lifelines Interdependency Study Update

Dr. Laurie Johnson

Dr. Johnson provided a progress report of the Lifelines Interdependency Study which was launched about a year ago and expected to be complete in early 2013. She reviewed the study goals to first build a workable understanding of all our system interdependencies, and the consequences of existing conditions, to help expedite response and restoration planning among agencies. The study uses a 2006 analysis of the potential effects of a repeat of a 1906 earthquake as the scenario event and, as Dr. Johnson explained, when the interdependency study is complete, the city and the region will have, for the first time, a complete scenario integrating the likely building and lifelines damages resulting from such a major earthquake.

Dr. Johnson briefly reviewed some of the highlights of interviews already conducted as part of the study. These have focused on the more conventional lifeline systems of roads (both regional and local streets), the water system, gas and electricity, and telecommunications. She reported that all of the systems studied, thus far, would have some significant levels of disruption within the city of San Francisco and their restoration could take many days, and in some cases weeks to months; there will be region-wide impacts as well. She also said that the interviews were revealing some heavy interdependencies between different operators and lifelines systems. For example, all the systems are very dependent upon the restoration of regional road network and getting access into and around the city of San Francisco. Similarly, there is a strong dependence of all systems on telecommunications and fuel. Dr. Johnson closed by reviewing the schedule for the study. She hopes to conduct the remaining interviews in the last quarter of 2012 and early 2013, completing the rest of the major systems, such as wastewater, auxiliary (fire-fighting) water system, and telecommunications and then transit operators, the ports and airports, and fuel providers.

3) Proposed PG&E Embarcadero-Potrero 230kV Transmission Project

**Ontario Smith, Senior Government
Relations Representative,
Pacific Gas & Electric Company**

Mr. Smith reviewed the proposed PG&E Embarcadero-Potrero 230kV Transmission Project and described how the Lifelines Council served as an excellent conduit to the City family and a tangible success story for the Council's collaborative approach to raising and solving lifeline system vulnerability issues. As background, Mr. Smith explained that San Francisco's electrical system is fed by three transmission routes that come up the Peninsula; San Francisco doesn't have its own power generating source. He said that loss of a major substation in San Francisco could create a major system instability, affecting reliability of the system during restoration. He explained that the Embarcadero substation is currently supplied power by two cable lines that run from the Martin street substation and through high liquefaction-prone soils. PG&E estimates that repairs to one of those cables could take a minimum of 8 hours and up to 7 weeks, depending upon the level of damage.

Mr. Smith noted that the issue of system reliability was raised during the Lifelines Council's interdependency study interview with PG&E in November 2011, and that maintaining the Embarcadero station is critical to San Francisco's downtown and central waterfront region. PG&E proposes that adding a connection that links the Embarcadero substation with the Potrero substation would help improve system reliability particularly in the downtown area in a major earthquake. It would also allow PG&E greater operational flexibility during planned infrastructure work and unexpected equipment outages.

Working with the City Administrator's Office, SF Department of Public Works, and numerous other city agencies, PG&E conducted a bus tour along with on-site explanations of the three options for various City departments, stakeholders and officials. Once all the input was collected, Mr. Smith said that the City's preference was the underwater route because it added resiliency to the city's electric grid while also causing the least amount of construction-related disruption to infrastructure and commerce in the downtown area. Mr. Smith said that PG&E is continuing with its project design and approval process. It hopes that work can begin in 2014 and completed by 2015.

4) Small Group Discussions on Potential Lifelines Council Workgroup Topics for 2013

Council members self-selected to join one of two small groups to discuss the potential list of work program topics for the Council's 2013 Work Program. The two groups were: Restoration and Recovery Planning Issues, and Mitigation and Regulatory Issues. Ms. Alicia Johnson and Mr. Nick Majeski facilitated the Restoration and Recovery Planning Issues group. Dr. Johnson and Mr. Poland facilitated the Mitigation and Regulatory Issues group. The groups were provided with a list of about twenty potential work group topics. The topics came from recommendations made by Council members at previous meetings and during the interdependency study interviews and were organized according to the SPUR Resilient City recommendations. Each group was asked to review the list; add and delete topics; and to prepare short descriptions of each topic. The small groups were also asked to consider which Council members should be involved with a particular topic, make any suggestions about who should chair the work group, and identify who would be willing to provide resources to help with the work.

Following the discussion period, Dr. Johnson explained that the groups' recommended work topics and their descriptions will be assembled into a survey that will be sent to all Council members to review and prioritize. The results of the survey will be presented at the next Council meeting with the goal of establishing 1 to 3 work groups for the Lifelines Council's 2013 Work Program. Each work group would be tasked with further defining the problem, deriving possible solutions, and finding "best practice" examples, when possible, that can be shared with the rest of the Council, identifying financing and implementation issues, and developing recommendations. Future meetings of the Lifelines Council will reserve time for groups to give updates on their progress and it is hoped that each group's final recommendations can be presented to other stakeholders and officials in the City and the region.

5) Adjourn

Meetings will continue on a quarterly basis.