

Case Study: **San Francisco Public Utilities Commission** Michael Carlin, SFPUC Deputy General Manager



Lifelines Council
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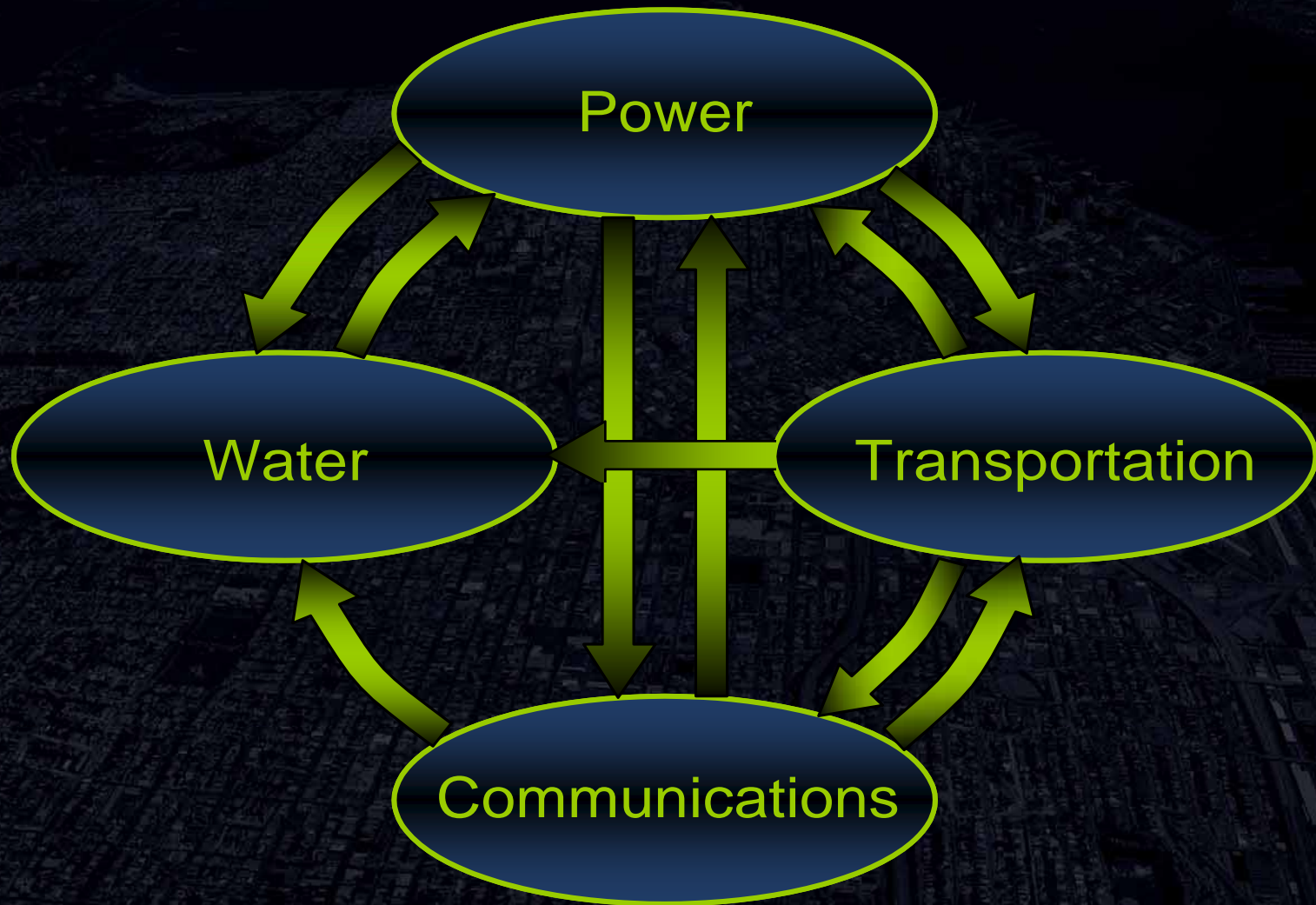
SFPUC Lifelines

- **Water**
 - Fire suppression
 - Businesses and 800,000 residents in San Francisco
 - 1.6 million customers outside of San Francisco
- **Wastewater**
 - Wastewater collection and treatment in San Francisco
- **Power to Municipal Agencies**
 - Muni and SFO
 - Street and Traffic Lights
 - City Buildings

Example Seismic Planning Scenario San Andreas Earthquake



Lifeline Interdependencies



Improvements to Water Lifeline

- Water System Improvement Program (WSIP)
- 40 Projects in Local Program
 - Reservoirs and Tanks
 - Pump stations
 - Pipelines



Water System Service Goals

- Program-level service goals:
 - Scenario: Major Bay Area earthquake (San Andreas, Hayward or Calaveras)
 - Maintain basic service capability after earthquake
 - Perform temporary repairs to restore average delivery after 30 days.
- Restoration priorities:
 - Firefighting
 - Other lifelines (power, communications, transportation)
 - Critical facilities (e.g. hospitals)
 - Mass care facilities and schools
 - Residences and businesses

SFPUC Seismic Design Standards

- Defined seismic design standards to achieve service goals
- Applicable to new facilities and retrofits
- Based on industry guidelines and standards
- Additional reliability provided for critical facilities
- Structural performance depends on facility criticality:
 - I. Standard
 - II. Important
 - III. Critical

SFPUC Assumptions Regarding Other Lifelines

- Assume temporary interruption of other lifelines
- Implement contingencies and short-term backups until lifelines are restored:
 - Back up generators at critical facilities
 - Material stockpiles in strategic locations
 - Redundant communications
 - Operations contingencies
 - Staffing contingencies

Coordination Through Lifelines Council

- Understand interdependencies of lifelines
- Understand performance of other lifelines and how to adjust recovery plans accordingly
- Work jointly to focus on restoration of high-priority services