



***Global Forum -
Sustainability and Convergent
Technologies***

**Connecting Cities for Innovation
Green ICT**

November 5, 2007



Agenda

- Environmental Challenges Facing Cities
- ICT and the Environment
- San Francisco “Green” ICT Program



The Frontline

6.5 billion people on Earth

HALF of us
now live in

cities

**City & County of
San Francisco, USA**

 Image by: Stockli, Nelson, Hasler
Laboratory for Atmospheres
Goddard Space Flight Center
<http://rsd.gsfc.nasa.gov/rsd>

 USGS
United States Geological Survey

Hurricane Linda west of Mexico
September 9, 1997 17:45 UTC
Data from: NASA, NOAA, USGS 



Environmental Challenges





Role of ICT

Municipal Workforce



Code Enforcement
Building Inspection
Field Reporting

Transportation



Traffic Control
Disaster Management
Still Cameras

Public Works



Work Order Mgmt
Mobile CAD
Citizen Response

Law Enforcement



Video Surveillance
Incident Reporting
AVL

Utility



Parking
Water
Electricity

Fire



Incident management
Hazardous Materials
Building Maps

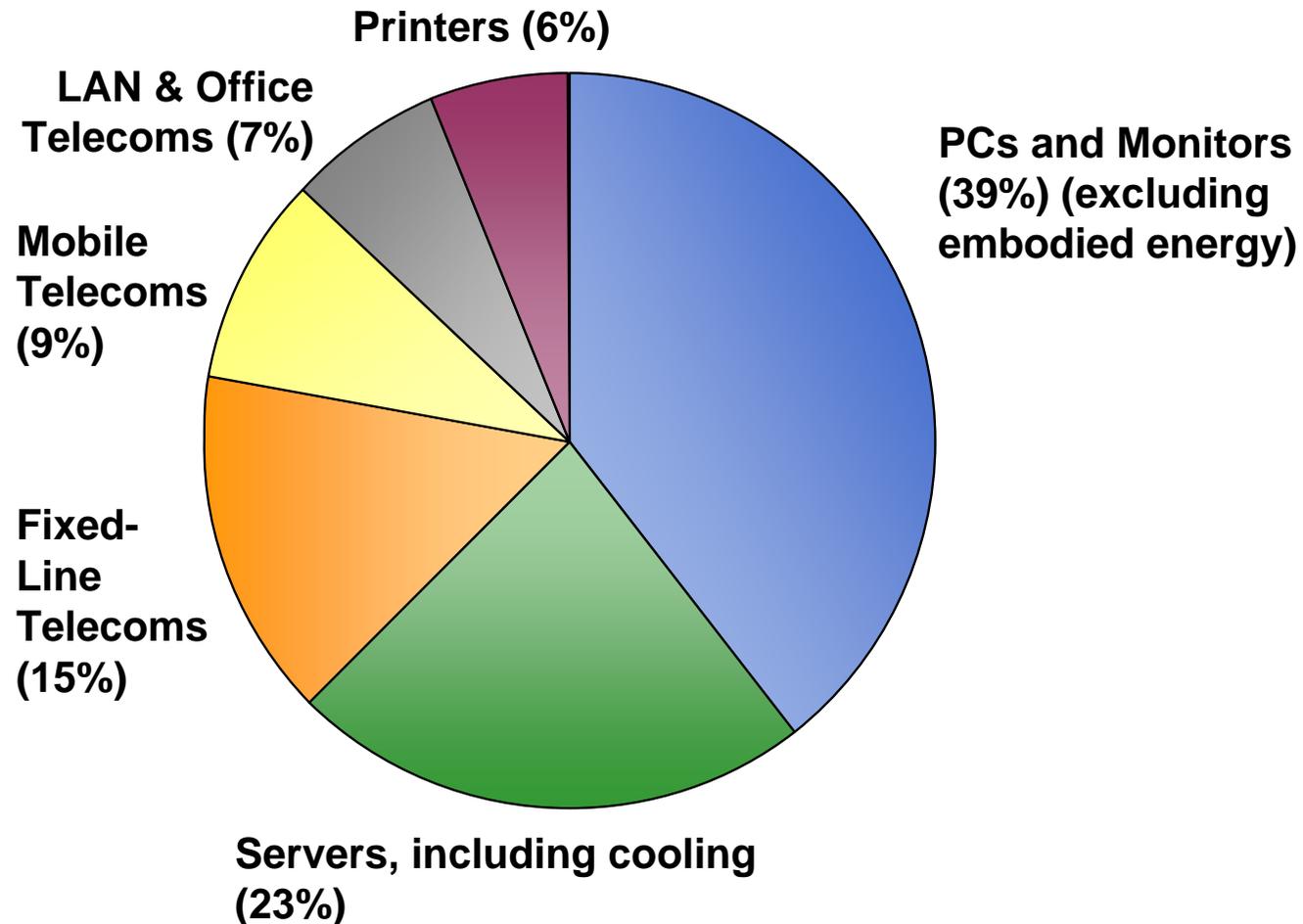


Problem with ICT

- According to Gartner, ICT accounts for approximately 2% of global carbon dioxide emissions
- Roughly the same emission level as aviation
- Other emerging challenges include
 - Water
 - Power
- And, the problem is growing



ICT's Global Carbon Dioxide Emissions



Source: Gartner



New Urban Environmental Agenda

June 1-5 San Francisco www.wed2005.org

green cities where the future lives

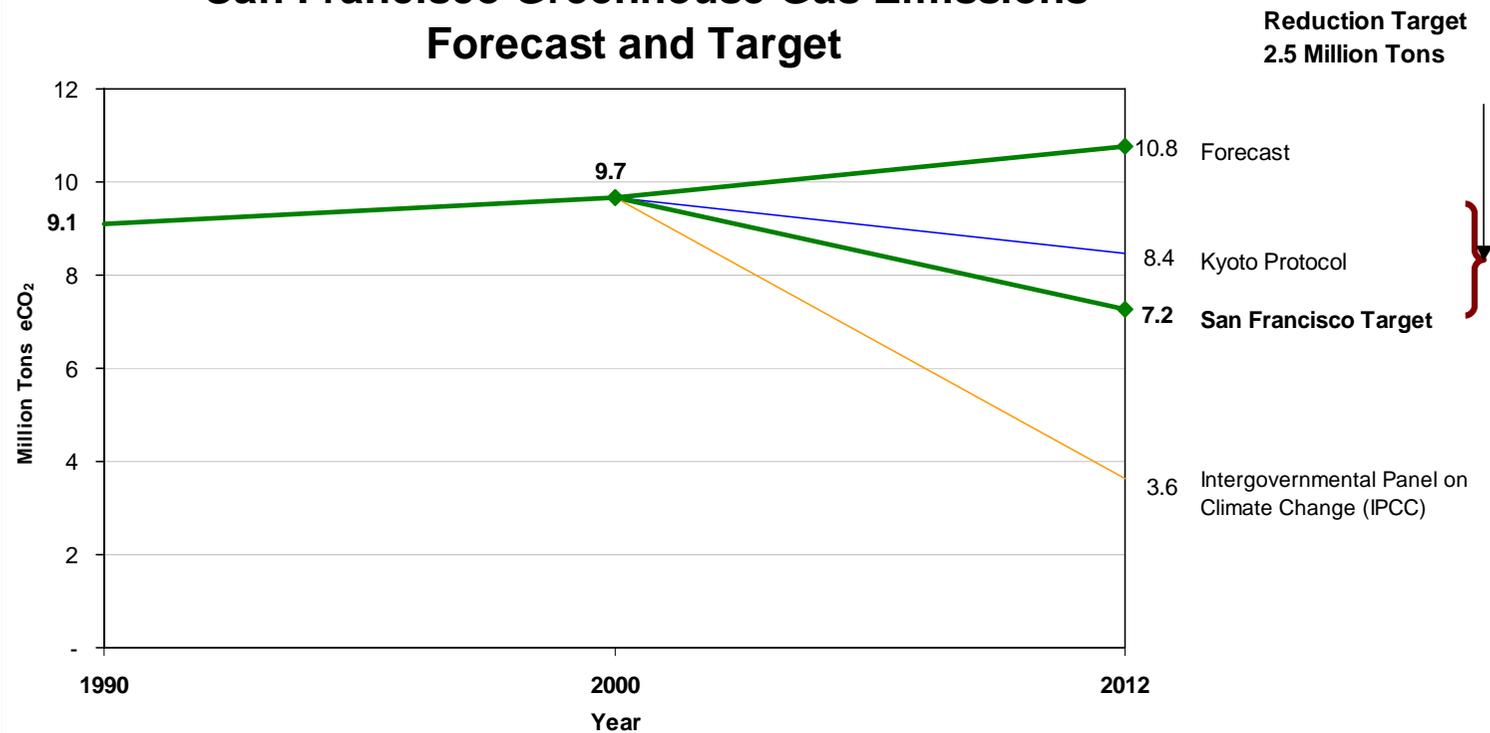


UN World
Environment
Day 2005



Greenhouse Gas Emissions - 20% below 1995 levels by 2012

San Francisco Greenhouse Gas Emissions Forecast and Target





Reduce Greenhouse Gas Emissions



Actions Category	Estimated CO ₂ Reduction
Transportation Actions	963,000
Energy Efficiency Actions	801,000
Renewable Energy Actions	548,000
Solid Waste Actions	302,000
Total	2,614,000 tons/year



San Francisco's Emerging "Green" ICT

- Vision – Connected Urban Development
- Mission – Measure and reduce carbon footprint by x% by 2015
- Goals
 - Effective governance of technology
 - Financial stewardship
 - Innovative & reliable operations
 - Organizational health



Effective Governance of Technology

- Objectives

- Develop vision
- Create plan
- Change policies



- Tactics

- Catalogue existing laws, policies, & operating plans
- Developed plan framework
- Gain political support
- Measure
- Showcase
 - February 2008 Conference



Financial Stewardship

- Objectives

- Better manage and reduce operating costs
- Gain sustainable revenue sources



- Tactics

- Technology Consolidation Program
 - 311 Project
 - Mainframe and server co-location & consolidation
- Technology Optimization Program
 - Server virtualization
- Technology Standardization Program
 - Server
 - Desktop and Laptop
- Technology Partners Program



Innovative & Sustainable Operations

- Objectives

- Reduce energy consumption & greenhouse gas emissions
- Reduce waste produced
- Reduce materials used
- Improve indoor environmental quality
- Address social issues



- Tactics

- ICT Purchase Program
 - Copy Smart
 - Computer Store
- ICT Use Program
 - E-Services Strategy
 - Document Management
 - Computer Use
 - 1Gig by 2020
- ICT Disposal Program
 - Copy Smart/Computer Store
 - Virtual Warehouse
- TechConnect Program



Organizational Learning & Growth

- Objectives

- Ensure culture of innovation
- Provide healthy environment
- Worker productivity

- Tactics

- Green ICT Change Program
 - Branding
 - Communications
 - Change leaders
- CCSF Telecommuting Program

