Health and Equity Metrics for Sustainable Development

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Social and Environmental Justice Challenges to Sustainable Development in San Francisco in 2004

- Will development protect and improve environmental quality for existing residents?
- Can development leverage needed infrastructure for health and well being?
- Will development result in displacement or facilitate social inclusion and integration?
- Will economic equity and health be included along with resource conservation in “sustainability?”
Healthy Development Measurement Tool: A product of a community healthy cities vision

1) Community vision for a health city (27 objectives)
2) Community-level Health Indicators
3) Policy and Design Strategies
4) Criteria for healthy development
5) Public Health Evidence
Map of areas exceeding PM 2.5 standards:

Identifies high pollution areas for emissions and exposure reductions
Use of air and noise pollution exposure analysis to protect health in industrial to residential rezoning

- Rezoning of historically industrial lands threatened new environmental impacts on residents from noise, air pollutants, traffic hazards

- Air and noise pollution analysis justified new mitigations to reduce noise and air pollution exposure for new residents:
  - Stronger ventilation requirements for traffic affected developments
  - Analysis and mitigation of noise conflicts
Map of High Corridor Injury Density:

Seven percent of city street miles account for 55% of serious and fatal pedestrian collisions.
High-Injury Corridor Analyses Influenced Citywide Pedestrian Safety Planning

- Reprioritized enforcement and engineering resources
  - Routine police presence along corridors
  - Engineering plans for high-injury corridors

- Identified gaps in existing safety toolkit
  - Arterial traffic calming
  - Photo-enforcement of speed
  - Turning restrictions

- Increased attention to policy obstacles
  - Insufficient funding for pedestrian safety
  - Prioritization of vehicle needs
  - Need for inter-agency coordination
2015 "Business As Usual"

Total Resident Population
San Francisco, CA (2005)
- 2015 Potential Congestion Pricing Zone
- Total Resident Population
  - 0
  - 1 - 200
  - 201 - 400
  - 401 - 600
  - 801 - 1600
  - 1601 - 3980

Total Resident Population Percent Change
San Francisco, CA (2005 to 2015)
- 2015 Potential Congestion Pricing Zone
- Total Resident Population % Change
  - 0%
  - 1% - 25%
  - 26% - 50%
  - 51% - 75%
  - 76% - 100%
  - 101% - 163%

San Francisco 2005 Traffic Volume Density
- 2015 Potential Congestion Pricing Zone
- Traffic Volume Density (100m Grids)
  - Lighter Traffic Density
  - Heavier Traffic Density
  - Heaviest Traffic Density

San Francisco Change in Traffic Volume Density (2005 to 2015BAU)
- 2015 Potential Congestion Pricing Zone
- Change in Traffic Volume Density (100m Grids)
  - Lighter Amount of Change in Traffic Density
  - Heavier Amount of Change in Traffic Density
  - Heaviest Amount of Change in Traffic Density

Source: Association of Bay Area Governments (ABAG)
City and County of San Francisco Department of Public Health Environmental Health Section
Mapping public infrastructure quality and access

Illustrates a smart growth challenge of providing quality school resources in “infill” areas
Technical challenges to equity indicator development: The example of neighborhood food resources

- What is the right spatial scale for measuring food resources?
- How to incorporate quality, choice, cost, and transport into measures of access?
- What is an actionable to improve equity of food resources?
Broader Lessons and Opportunities

- Planning institutions do not act holistically to create conditions needed to fulfill human needs.
- Performance measures for health and equity are needed to advance a human needs agenda in sustainable development.
- Need to use robust, scalable, and valid measures to assess equity.
  - Do measures speak to actual human needs?
  - Who are vulnerable populations (e.g. transit dependent)?
  - Does aggregate analysis hide disproportionate impacts?
Resources:

SF HIA Collaborative
www.hiacollaborative.org

SF Department of Public Health
www.sfphes.org

Healthy Development Tool
www.thehdmt.org

UC Berkeley HIA Group
http://sites.google.com/site/ucbhia

Human Impact Partners
www.humanimpact.org