

# Integrating Health in Transportation Policy: HIA, EIA or DNA



**Rajiv Bhatia, MD, MPH**  
**San Francisco Department of Public Health**



# Eastern Neighborhoods Community Health Impact Assessment (ENCHIA)



- Collaborative, consensus-based health impact assessment to analyze how development in three SF neighborhoods affected health
- Multi-stakeholder public + private Community Council guided the process
- *ENCHIA stakeholders sought a comprehensive human needs-responsive metric to guide and evaluate urban planning*
- 18-month process culminated in the development of the “Healthy Development Measurement Tool”

# Diverse health needs impacted by urban transportation systems

- Access:
  - Convenient access to jobs, schools, basic needs
  - Ability to use walking, bicycling, and public transit
- Safety:
  - Clean Air
  - Quiet neighborhoods
  - Motor vehicle collision hazards
- Equity:
  - Areas with disproportionately higher environmental impacts and lower infrastructure investments



# SF's Healthy Development Measurement Tool provided a framework and monitoring system for urban planning

- Healthy city vision  
Community-health objectives
- Community-level Health Indicators
- Policy and Design Strategies
- Criteria for healthy development
- Public Health Evidence



## Healthy Development Measurement Tool

A comprehensive evaluation metric to consider health needs in urban development

[Home](#) | [Introduction](#) | [Tool Instructions](#) | [The Tool](#) | [Application Resources](#) | [About ...](#)

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**Recent News**

**2008-05-27 HDMT Website and Data Revision Complete**  
We recently completed an extensive update to HDMT website content, including to indicators and data, development targets and checklist, and neighborhood profiles. In addition, we added a "Tool Instructions" section to the website to better explain how the HDMT can be applied. Thank you for your patience as we completed this update.

**2008-05-27 Draft Evaluation of Eastern Neighborhoods Area Plans Released**  
The public draft of our evaluation of the Eastern Neighborhood Area Plans using the HDMT is now available. [Click here](#) to download the report "[Impacts on Community Health of Area Plans for the Mission, East SoMa, and Potrero Hill / Showplace Square: An Application of the Healthy Development Measurement Tool](#)".  
*For additional HDMT updates and changes, please visit [News Archives/Corrections and Errors](#).*



Get Started...	The Tool	Who We Are
<ul style="list-style-type: none"> <li>Begin with an <a href="#">introduction</a> or download a <a href="#">helpful presentation</a> (PDF).</li> <li><a href="#">Use the Tool.</a></li> <li>Look at <a href="#">community indicators</a>.</li> <li>Check out <a href="#">SF neighborhood data</a>.</li> <li>Access Tool <a href="#">resources</a>.</li> </ul>	<p>The <b>Healthy Development Measurement Tool</b> is a comprehensive evaluation metric to consider health needs in urban development plans and projects.</p> <p>The HDMT explicitly connects public health to urban development planning in efforts to achieve a higher quality social and physical environment that advances health.</p>	<p>We're committed to assessing urban environmental conditions and responding to health inequities and environmental policy gaps using health impact assessment methods. We're the <a href="#">San Francisco Department of Public Health, Program on Health, Equity and Sustainability</a>.</p> <p>Be sure to <a href="#">contact us</a> with any questions or comments.</p>

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 The Healthy Development Measurement Tool | San Francisco Department of Public Health, Copyright © 2006  
 Page accessed on Monday, July 14, 2008 at 01:16 PM.

# Metrics for a Healthy Transportation System

Access	Transportation Safety	Ambient Environmental Quality	Livability / Walkability
Daily travel time / distance	Share of urban road network with design speed <30 mph (urban arterials) and <20 (residential streets)	<b>Traffic density (vehicle miles travelled / unit area)</b>	<b>Pedestrian Environmental Quality Index / Pedestrian Level of Service</b>
Average daily travel trips	<b>Number injury collisions</b>	<b>Area with PM 2.5 or NOx concentration above health based standards</b>	Ratio of pedestrian network length to surface road network length
Share of income spent on transportation expenses	<b>Number of severe injuries and fatalities</b>	Health effects (pre-mature mortality, asthma hospitalizations, etc) attributed to traffic pollution	Pedestrian density
Number of health-relevant goods and services within walking distance		<b>Population exposed to ambient noise &gt;55 dB (WHO community standard)</b>	Frequency of social contacts
<b>Proportion of households within 1/2 mile of local or regional public transport stop with &lt;15 minute frequency</b>		Health effects (stress, sleep disturbance, etc) attributed to traffic noise	Population average minutes physical activity from active transportation

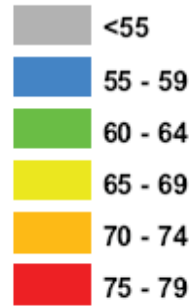
**Map of  
areas  
exceeding PM  
2.5 standards:**

Identifies high  
pollution areas  
for emissions  
and exposure  
reductions



# Transportation Noise Map 2008

Day-Night Noise Level (Ldn)



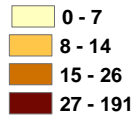
San Francisco Department of Public Health  
Environmental Health



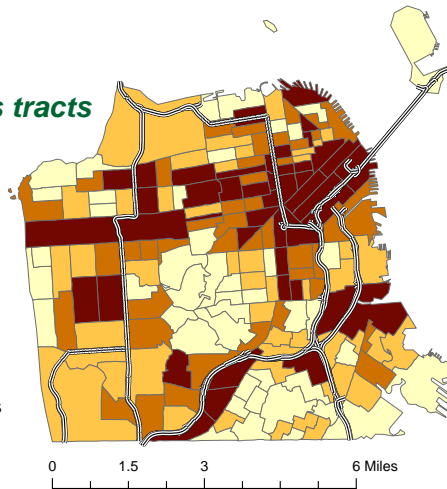
# SFDPH Pedestrian Injury Forecasting and Spatial Assessment of Disparities

**San Francisco census tracts  
(2001–2005)**

**Number of Collisions**



Highways/Freeways

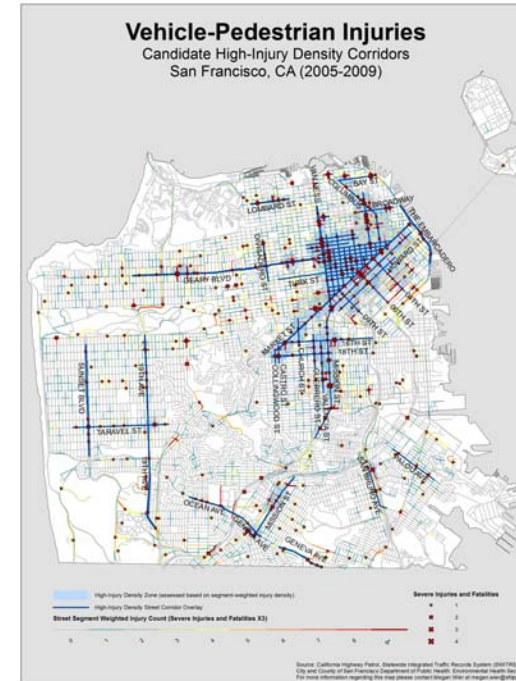


Source: California Highway Patrol, Statewide Integrated Traffic Records System

**Significant predictors of area-level collisions:**

- Traffic volume (+)
- Arterial streets (+) w/o surface transit
- Neighborhood commercial zoning (+)
- Employees (+)
- Residents (+)
- Land area (-)
- Below poverty level (+)
- Age 65 and over (-)

**Vehicle-Pedestrian Injuries**  
Candidate High-Injury Density Corridors  
San Francisco, CA (2005-2009)



**High-injury (blue) corridor methodology identifies:**

- 5.2% of city street length in miles
- 55% of severe and fatal pedestrian injuries
- 51% of total pedestrian injuries

Wier et al. *Accident Analysis & Prevention*. 2009.



# HIA of Road Pricing within SF Downtown Cordon

- ▶ Feasibility study approved by the San Francisco County Transportation Authority (SFCTA) Board: December 2010

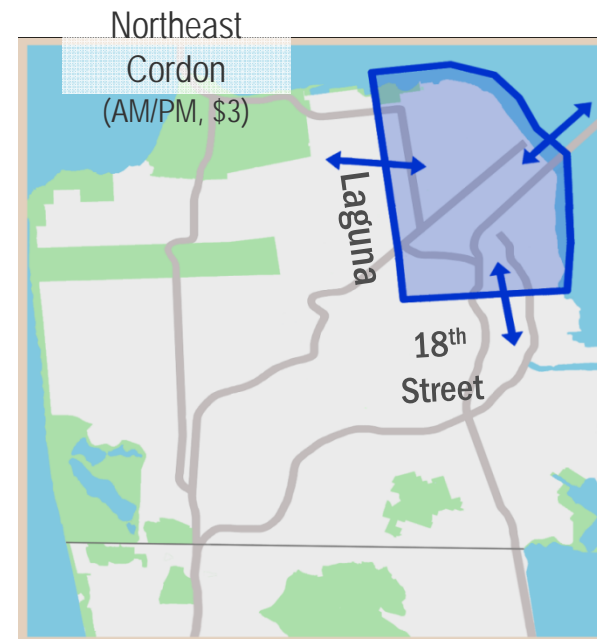
The Northeast Cordon (AM/PM) was the best performing (greatest benefits with the fewest adverse impacts) among dozens of scenarios:

- 12% fewer peak period auto trips
  - 21% reduction in vehicle hours of delay
  - 16% reduction in Northeast Cordon GHGs (5% citywide)
  - \$60-80M annual net revenue for transportation services and amenities
  - 20-25% transit speed improvement
- ▶ Next steps: further study/analysis, including environmental review
  - ▶ Implementation decision: likely 2-3 years, following environmental review

[www.sfcta.org/sfmobility](http://www.sfcta.org/sfmobility)

*SFDPH noted SFCTA study assessing:*

- Transportation System Performance
- “3 Es”: Environment; Economy; Equity



## Health Impacts?

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## Road Pricing HIA: Baseline conditions (2005)

- ❑ Substantial health burdens from transportation, including quantifiable impacts on air pollution-related mortality, noise-related heart disease, and traffic injuries to pedestrians and cyclists
- ❑ Substantial unrealized potential health benefits from active transport
- ❑ Disproportionately burden on residents living *within the pricing zone*

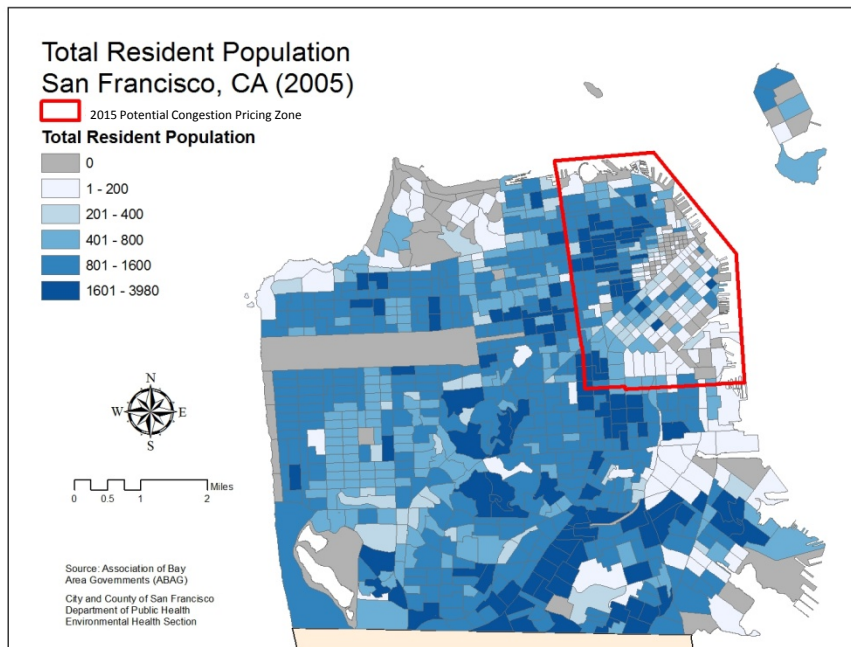
[http://www.sfphes.org/transportation/Road\\_Pricing\\_HIA\\_Technical\\_Report.pdf](http://www.sfphes.org/transportation/Road_Pricing_HIA_Technical_Report.pdf)

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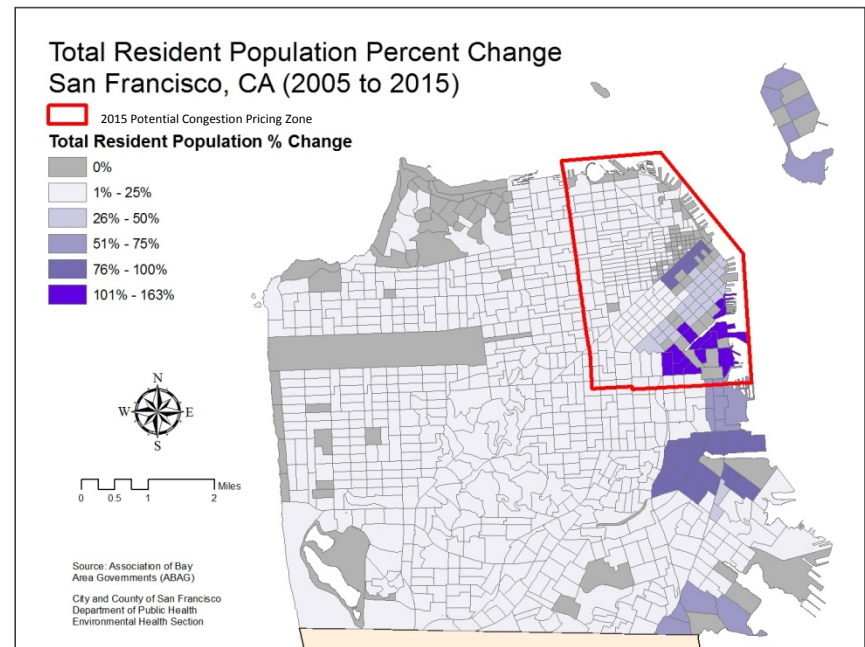
## Road Pricing HIA: Future (2015) with and without road pricing

- ❑ Increased traffic volume and adverse transportation impacts in priority development areas with BAU
- ❑ Modest benefits from pricing effects on traffic volume under future conditions.
- ❑ Largest benefits related to active transportation and avoidance of vehicle-pedestrian collisions.

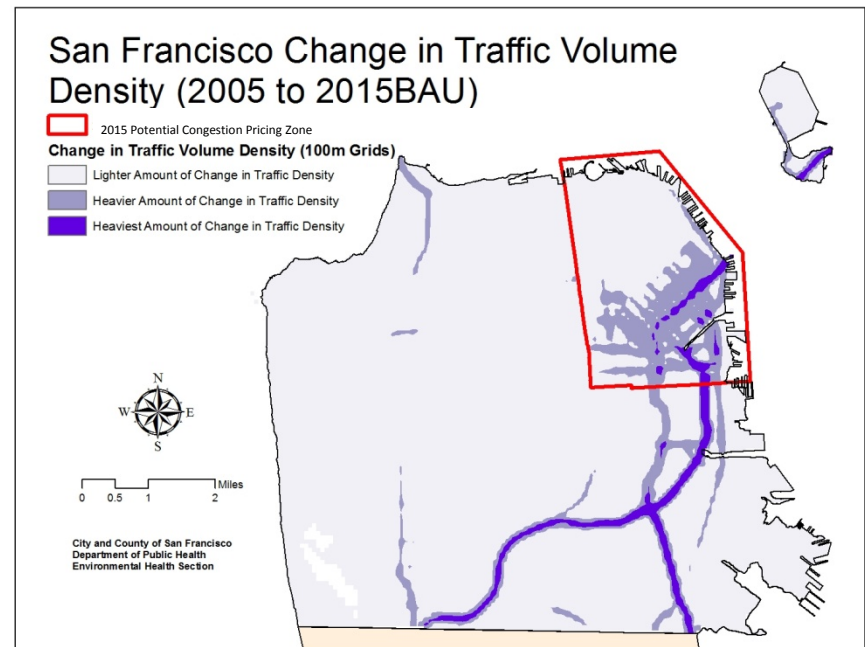
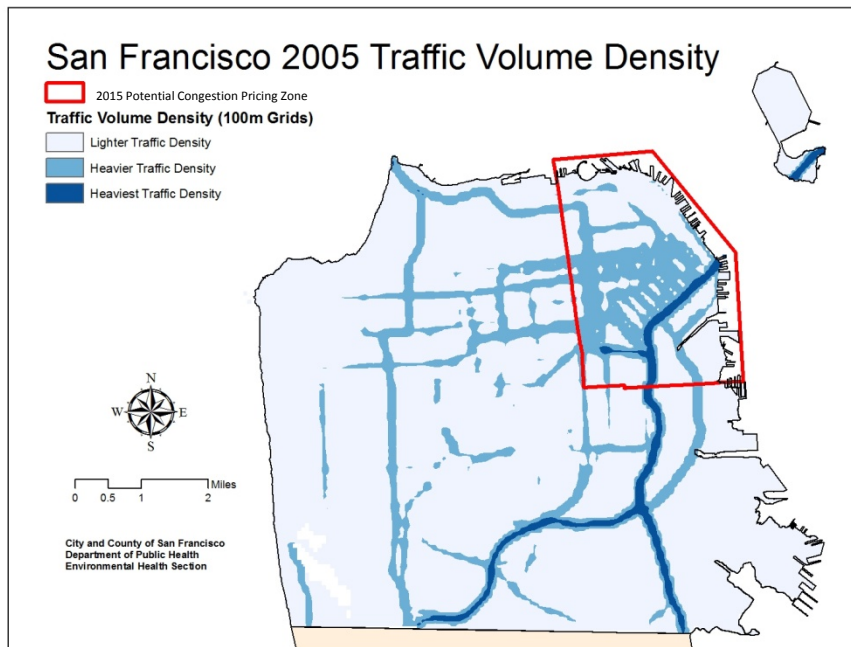
[http://www.sfphes.org/transportation/Road\\_Pricing\\_HIA\\_Technical\\_Report.pdf](http://www.sfphes.org/transportation/Road_Pricing_HIA_Technical_Report.pdf)



2005



2015 "Business As Usual"



# Road Pricing HIA: Economic valuation

<i>Economic value of health effects</i>	<i>Estimated Value (\$, Millions)</i>			
	2005	Change: 2005 - 2015 BAU	Change: 2005 - 2015 RP	Change: 2015 BAU - 2015 RP
Illness, injury and death from environmental hazards	-\$1,124	-\$49	\$4	\$53
Lives saved with active transportation (walking and biking)	\$1,225	\$80	\$112	\$32

[http://www.sfphes.org/transportation/Road\\_Pricing\\_HIA\\_Technical\\_Report.pdf](http://www.sfphes.org/transportation/Road_Pricing_HIA_Technical_Report.pdf)

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# Road Pricing Recommendations to the Transportation Authority's Study Process

- Increase congestion pricing fees on poor air quality days
- Invest in walking and biking safety improvements where injuries are highest
- Use quieter, low-emission hybrid buses in areas where noise, air pollution are worse
- Invest in walking and biking infrastructure to encourage trips into/out of the zone

# Van Ness Avenue Bus Rapid Transit (BRT)

- Proposed BRT for Van Ness Avenue, San Francisco's major north-south transit route
- Draft EIS/EIR included detailed study of air pollution, noise, pedestrian safety and transit performance effects.
- HIA judged to have low-information value – given project support and commitments and existing comprehensive impact assessment process
- Health department provided focus comments on EIA assessment of noise and pedestrian safety analysis



# Design and evaluation of Bay Area Transportation Plans now include health and equity metrics!

- GHG reduction
- Adequate housing
- Healthy and Safe Communities
  - PM 2.5 attributable mortality
  - Transportation Injuries
  - Active transportation time
- Open Space preservation
- Household transportation costs
- Reduction of Travel times
- Economic vitality—GDP growth
- Transportation system maintenance





# Broader Lessons for Healthy Transportation Planning

- Opportunities to integrate health performance metrics into existing routines and practices of the transportation planning.
  - Means for inclusion and prioritization of health supporting projects and designs
  - Leverages existing processes
  - Generates ownership by transport sector
  - Creates a monitoring and accountability system
- HIA has important residual roles
  - Inter-institutional learning
  - Major policy change and major projects
  - Metrics and methods development
  - Accountability where health is missing
- Main challenges and needs
  - Widely applicable metrics and methods
  - Sufficient attention to disproportionate impacts



# Technical needs for health and transportation planning

- Development of replicable, scalable, actionable metrics
- Estimation methods integrated with transportation modeling tools
- Robust methods for evaluating equity
- A toolbox of policy and design solutions
  - Road user charges
  - Design standards for non-motorized safety
  - Automated enforcement



# Resources:

San Francisco Bay Area  
HEALTH IMPACT ASSESSMENT COLLABORATIVE

Search...

HOME ABOUT US CASE STUDIES TOOLS PARTNERSHIPS TRAINING + MENTORSHIP POLICY DISCUSSION BOARD

**TRAINING + MENTORSHIP**  
We provide presentations, lectures, and workshops, as well as technical support and mentorship nationally.

**TOOLS**  
Collaborative members have developed and applied a number of innovative evidence-based tools. Find them here.

**DISCUSSION BOARD**  
Post and review questions on starting your own HIA, resource and capacity needs, influencing decisions and more.

**FAQ**  
Find answers to all your HIA related questions including "What is HIA?" and "What does

**Who We Are**  
We are a group of academic, government, and non-profit HIA practitioners who have joined together to be more effective in conducting HIA, engaging stakeholders in partnerships, providing training, and helping to develop policy. [MORE >](#)

**Case Studies**  
National Paid Sick Days HIA Released - June 2009: Collaborative members are excited to release an HIA of a proposed national paid sick days law. [MORE >](#)

**WHAT'S NEW**

**Minimum Elements and Practice Standards for HIA - Newly Released!**  
November 2010  
The HIA of the Americas Practice Standards subgroup is excited to release an updated version of the "Minimum Elements and Practice Standards for Health Impact Assessment (HIA)". Minimum Elements answer the question of "what essential elements constitute an HIA" as distinct from Practice Standards, which answer the question, "how to best conduct an HIA." Overall, the hope is to translate the values underlying HIA along with key lessons from HIA practice into specific standards for practice for each phase of the HIA process.

**Draft San Francisco Public Housing Redevelopment HIA Released**  
August 2010  
The UC Berkeley Health Impact Group is excited to release a public draft of a retrospective HIA of redevelopment of two public housing sites through the federal HOPE VI program. The HIA asked the

SF HIA Collaborative

[www.hiacollaborative.org](http://www.hiacollaborative.org)

SF Department of Public Health

[www.sfphes.org](http://www.sfphes.org)

Healthy Development Tool

[www.thehdmt.org](http://www.thehdmt.org)

UC Berkeley HIA Group

<http://sites.google.com/site/ucbhia>

Human Impact Partners

[www.humanimpact.org](http://www.humanimpact.org)