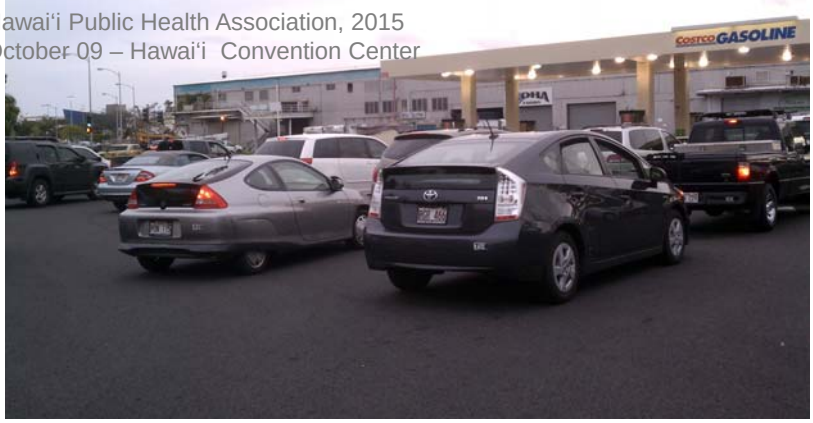
MOVING in the face of CLMATE CHANGE

Health and the Built Environment

Hawai'i Public Health Association, 2015
October 09 – Hawai'i Convention Center



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Intergovernmental Panel on Climate Change

IPCC: http://www.ipcc.ch/
SPM: http://www.climatechange2013.org/

Climate Change 2013:
The Physical Science Basis

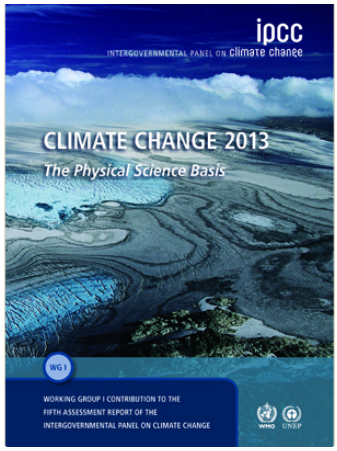
IPCC Working Group I Contribution to AR5

The Twelfth Session of Working Group I (WGI-12) was held from 23 to 26 September 2013 in Stockholm, Sweden. At the Session, the Summary for Policymakers (SPM) of the Working Group I contribution to the IPCC Fifth Assessment Report (WGI AR5) was approved and the underlying scientific and technical assessment accepted.

SUMMARY FOR POLICYMAKERS

FULL WGI AR5 REPORT

PDF - 1535 Pages - 375 MB



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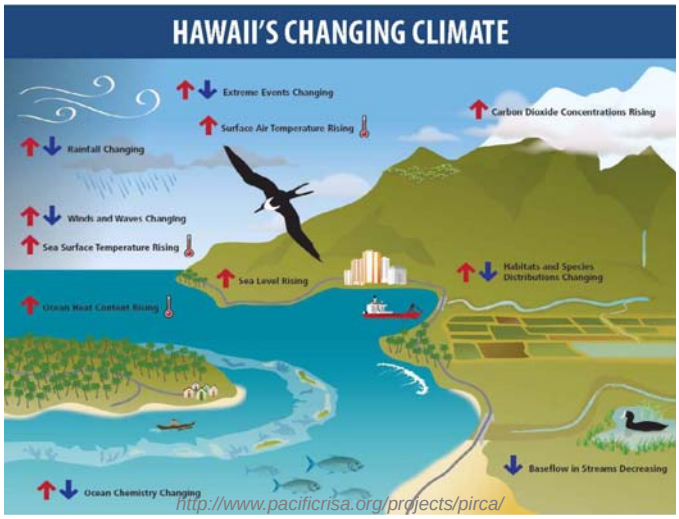
Regional Climate Assessment (PIRCA)



http://www.pacificrisa.org/projects/pirca/

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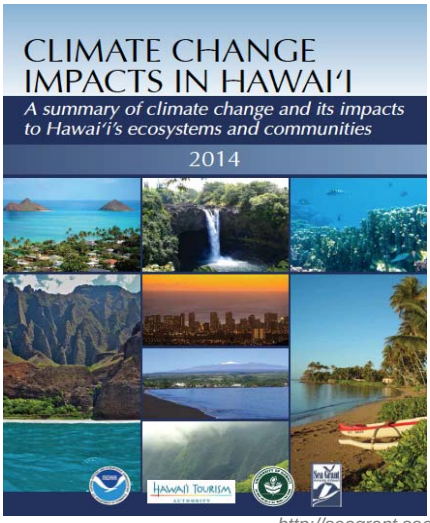
Hawai'i climate change impacts



http://seagrant.soest.hawaii.edu/CCIH

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Carrots and Sticks

Carrots and Sticks

Carbon is global…

Adaptation is local…

Carrots and Sticks

Carrots and Sticks

Hawai‘i…

…is the most fossil fuel dependent state in the nation…
-Hawai‘i Clean Energy Initiative

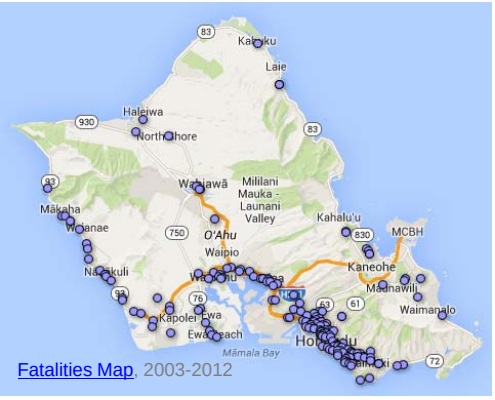
…is the only state in the US that still permits the construction of new cesspools…
-US EPA

…suffers from the highest older pedestrian fatality rate in the country…
-Smart Growth America

Dangerous by Design

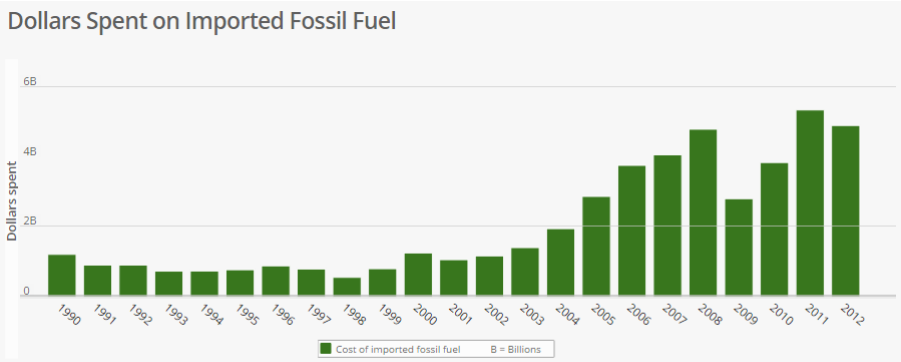
“Pedestrian fatality rates for older adults vary widely from state to state (see Table 3 on page 18). **Hawai‘i suffers from the oldest pedestrian fatality rate in the country**, with 6.81 deaths per 100,000 for adults aged 65 years and older, three times the statewide rate for all ages. **For those 75 and older** living in Hawai‘i, **the rate is an astonishing 9.75 per 100,000**” (p.17).

Smart Growth America, 2014.
“Dangerous by Design”



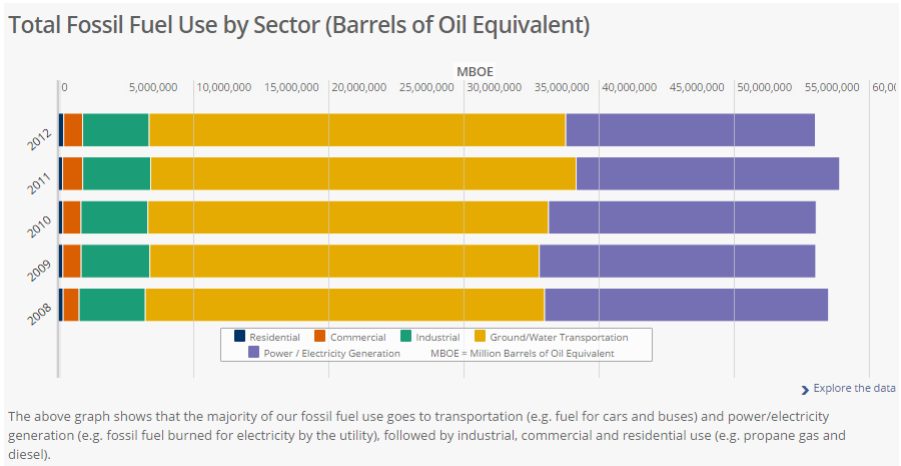
Fatalities Map, 2003-2012

Hawai‘i’s Imported Oil | $$$



Aloha+ Challenge Dashboard
https://dashboard.hawaii.gov/aloha-challenge

Hawai‘i’s Imported Oil | Sector Usage



Aloha+ Challenge Dashboard
https://dashboard.hawaii.gov/aloha-challenge

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Carrots and Sticks | Government Planning

Getting in Step: Making our **values** explicit and living them

- Pedestrian and Bicycle Friendly City – Section 6-1706, *Revised Charter of the City and County of Honolulu*. In November 2006, >77% of voters supported the charter amendment to make the roadway safer for people riding bicycles and/or walking.
- Complete Streets
  - State of Hawai‘i: Law, June 2009; Effect, January 2010 – Act 54
  - County of Kaua‘i: September 2011 – Resolution No. 2010-48
  - County of Hawai‘i: October 2011 – Resolution 171-11
  - City and County of Honlulu: March 2012 – Bill 26
  - County of Maua: April 2012 – Resolution No. 12-34
- Hawai‘i Statewide Pedestrian Master Plan
- O‘ahu Bike Plan
- Kaua‘i Multimodal Land Transportation Plan

Implementation?

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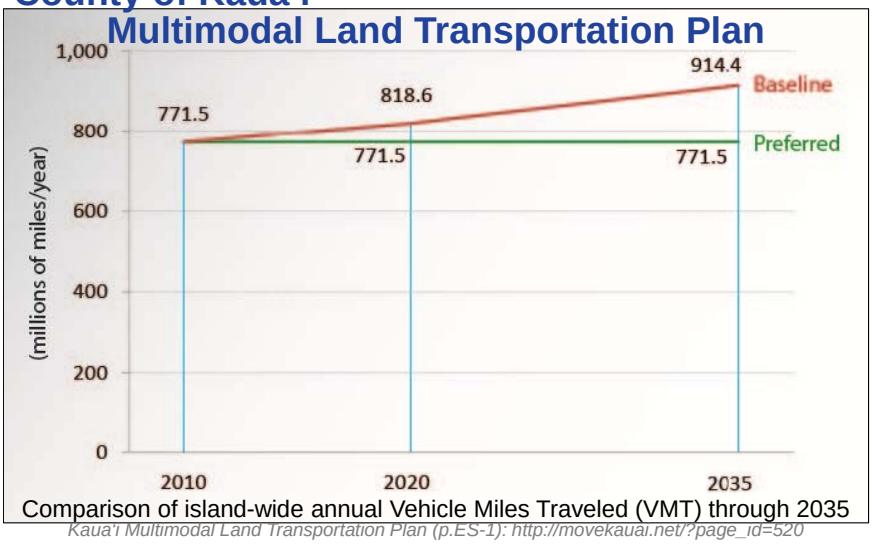
County of Kaua‘i
Multimodal Land Transportation Plan



Comparison of island-wide annual Vehicle Miles Traveled (VMT) through 2035

Kaua‘i Multimodal Land Transportation Plan (p.ES-1): http://movekauai.net/?page_id=520

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County of Kaua‘i MLTP | *Preferred Scenario*

Indicator	2010 Level	Difference between 2010 and 2035 Baseline	Preferred
Annual VMT (Vehicle Miles Traveled)	771.5 million	⇧19%	0%
Annual VMT per Capita	9,496	⇩3%	⇩18%
Annual Gallons of Motor Fuel Consumed	29.7 million	⇩13%	⇩27%
Annual Gallons of Motor Fuel Consumption per Capita	365	⇩29%	⇩40%
Annual GHG Emissions from Ground Transport (kg)	274 million	⇩13%	⇩27%
SOV* Mode Share	54.4%	0%	⇩28%
MOA* Mode Share	38.7%	0%	⇩2%
Transit Mode Share	0.4%	⇧32%	⇧839%
Walk Mode Share	4.5%	0%	⇧156%
Bike Mode Share	2.0%	0%	⇧274%
Fatalities from Motor Vehicle Collisions per 100 Million VMT	1.30	0%	⇩15%
Weekday Transit Ridership	1,641	⇧71%	⇧1,002%
% of Adults Meeting the Minimum Levels of Physical Activity**	57%	0%	⇧32%
Average Annual Household Transportation Costs	$ 14,860	⇧15%	⇩6%

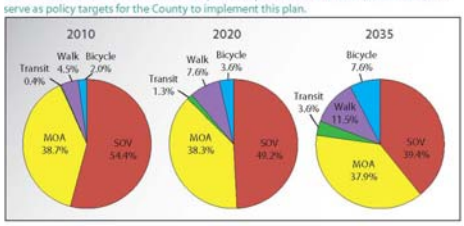
*SOV - Single Occupant Vehicle, MOA - Multiple Occupant Auto

** The CDC recommends adults get 30 minutes of moderate exercise 5 days a week to maintain a healthy lifestyle

In 2010 the average household VMT in Kaua'i was 25,000 compared to 20,000 nationwide. Kaua'i Households also spent an estimated average of $2,400 more on transportation than the nationwide average

In 2010 0.4% of all trips in Kaua'i were made by transit and 4.5% of all trips were made by walking. In comparison, across the U.S., transit trips accounted for 1.9% of all trips and walk trips accounted for 10.4% of all trips

The Preferred Scenario mode share of all person trips for 2020 and 2035 (shown here) will serve as policy targets for the County to implement this plan.



* SOV = Single-Occupant Vehicle, MOA = Multiple-Occupant Auto

Kaua‘i Multimodal Land Transportation Plan (p.ES-2): http://movekauai.net/?page_id=520

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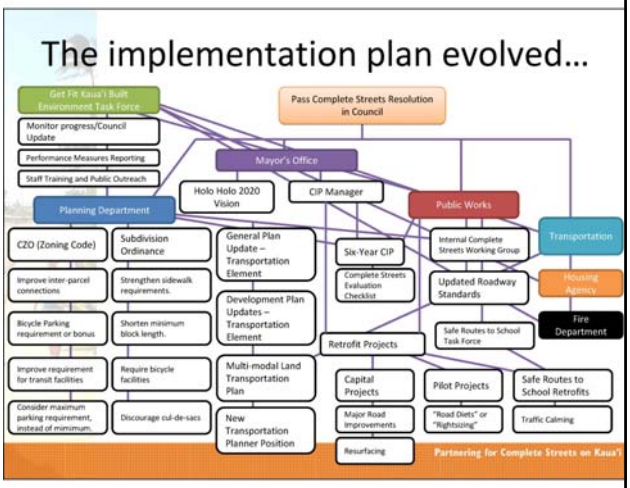
County of Kaua‘i | Complete Streets

Getting in Step

Implementation?

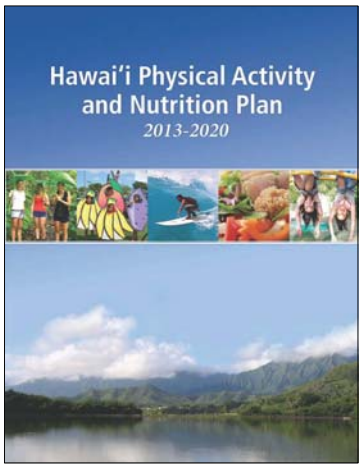
*Tabata, L and Williams, M. 2012. Partnering for Complete Streets on Kaua‘i, Hawai‘i Congress of Planning Officials: September 14.



Measures and Monitoring

Hawai‘i Physical Activity and Nutrition (PAN) Plan

HAWAII STATE DEPARTMENT OF HEALTH



Measures and Monitoring

Hawai'i Physical Activity and Nutrition (PAN) Plan

Hawaii State Department of Health

3. Community Design and Access - Physical Activity

Funding for Safe Routes to School	**Current:** 2208510 **Target:** 1026923 dollars	2208510 / 1026923 (Current Target)	TARGET MET
Workers Commuting by Active Transportation	**Current:** 11.1 **Target:** 11.9 percent	11.1 / 11.9 (Current Target)	TARGET NOT MET
Workers Commuting by Bicycling	**Current:** 1.1 **Target:** 0.9 percent	1.1 / 0.9 (Current Target)	TARGET MET
Workers Commuting by Public Transportation MAP	**Current:** 6.4 **Target:** 6.7 percent	6.4 / 6.7 (Current Target)	TARGET NOT MET
Workers Commuting by Walking MAP	**Current:** 4.7 **Target:** 5.1 percent	4.7 / 5.1 (Current Target)	TARGET NOT MET

http://www.hawaiihealthmatters.org/index.php?module=Trackers&func=display&tid=1002

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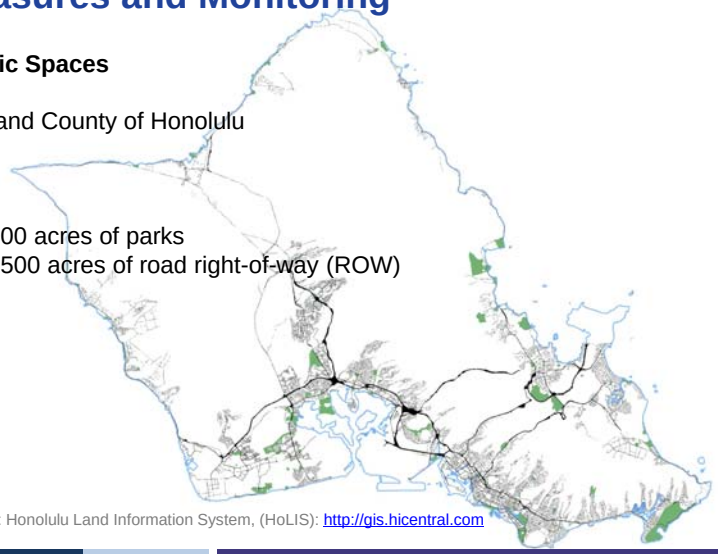
Measures and Monitoring

Public Spaces

City and County of Honolulu

< 8,400 acres of parks
> 14,500 acres of road right-of-way (ROW)



Source: Honolulu Land Information System, (HoLIS): http://gis.hicentral.com

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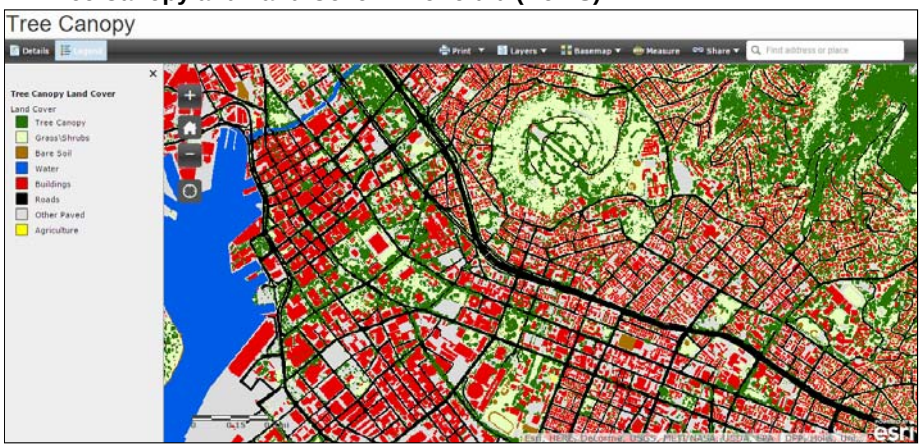
Measures and Monitoring

Tree Canopy and Land Cover – Honolulu (HoLIS)



http://cchnl.maps.arcgis.com/home/

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Getting in Step

"[T]he idea [Complete Streets] harkens back to an idea that was essentially rendered obsolete in the early 20th century as the car began its ascent: that the public road is intended for more than one mode of transportation."

-Tom Vanderbilt, "Learning to Walk", April 14, 2012, *Slate*

Making **active transportation** more **desirable** and **possible** and **habitual**

- Safety
- Accessibility
- Aesthetics
- Better facilities
- Better connections with transit
- Better transit (which itself increases walking)
- Stronger financial incentives (e.g., higher gas prices, pre-tax bus passes)
- Better land-use decisions (e.g., housing + transportation index, density)
- Design guidelines, street and sidewalk treatments (e.g., block length, building facades, intersections/sq.mi., street trees)

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Getting in Step

What is walking ***for***?

In the US, **commuting** by any mode of travel accounts for **< 15% of all trips** and **28% of all trips** in America are **< 1 mile** – "discretionary travel"

Hawai'i's numbers?

Who actually can commute to work via **"active transportation"**?

Other considerations:

- Relationships between land use, housing, and transportation
- Siting, distance, terrain
- Infrastructure

Getting in Step

Next Step = *ƒ*(tolerance for/wish to avoid inconvenience, frustration, discomfort)

Results: people using escalators; preferring street-levels vs. elevated walkways or subterranean tunnels; jaywalking; "desire-lines" or "cow paths"

How to make walking as easy and enjoyable as possible?

How to make walking habitual?

What is walkable?

Getting in Step

Key Elements

- How Far Is It?
- How Long Will It Take?
- Will I Enjoy It?
- Do I Have To?

Key Elements

- Distance
- Travel Time
- Perception + Experience
- Choice/Necessity

1 mile = 5,280 feet = ~20 minutes




Getting in Step

"What better way to understand pedestrians than to be out among them…"

-Tom Vanderbilt, "Sidewalk Science", April 11, 2012, *Slate*



Getting in Step

Kapiolani Blvd. + Pensacola St.

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Getting in Step

Kalakaua Ave. – Kapiolani Blvd. and Ala Wai Blvd.

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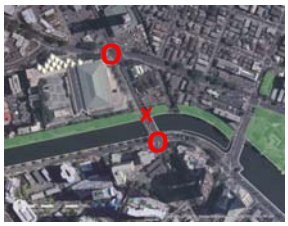
Getting in Step



Kalakaua Ave. – Kapiolani Blvd. to Ala Wai Blvd.

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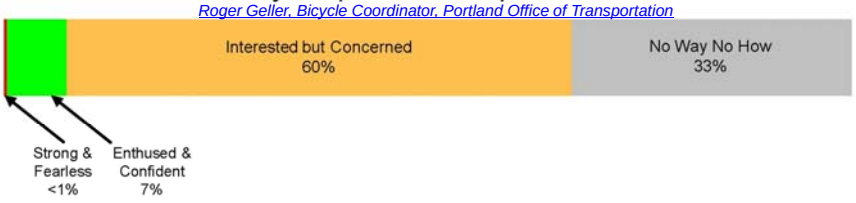
Getting in Step | Who

Key Elements: How Far Is It? *Distance*.
How Long Will It Take? *Travel Time*.
Will I Enjoy It? *Perception + Experience*.
Do I Have To? *Choice/Necessity*.

Four Types of Transportation Cyclists in Portland

By Proportion of Population

Roger Geller, Bicycle Coordinator, Portland Office of Transportation



Strong & Fearless will ride regardless of facilities; trip distance is not such an issue

Enthused & Confident comfortable in traffic with appropriate facilities; prefer shorter trip distances

Interested but Concerned Not attracted by bicycle lanes; Not comfortable in traffic; Will ride in low-volume, low-speed conditions (boulevards, off-street)

No Way No How not interested in using a bicycle for transportation

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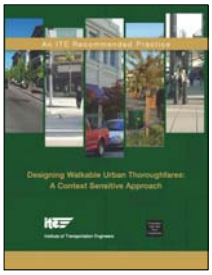
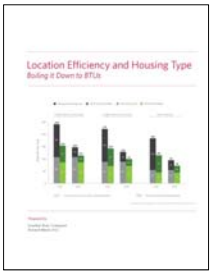
Getting in Step | How and Why

Smart Growth, Land Use Planning, and CIP and Infrastructure Investments
- Housing + Transportation Index, Location Efficiency, Siting Schools and Jobs and Getting to Schools and Jobs

All can have individual, community, and governmental benefits physically, ecologically, economically, and sociologically.





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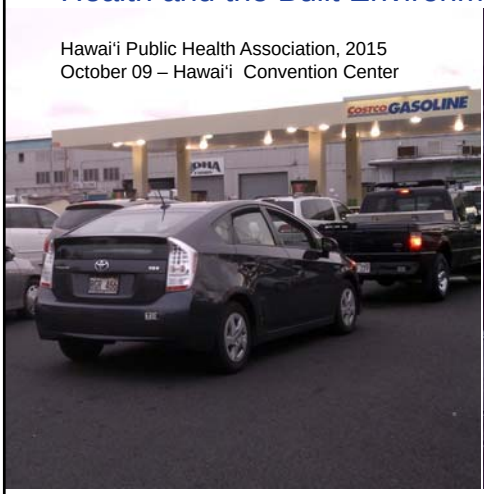

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