

Reconnecting the Nation: Meeting the Challenge of a Resource- Constrained World by Counting the Benefits of Livable Communities & Regions

ACEEE 30th Anniversary Policy
Conference

Scott Bernstein, CNT

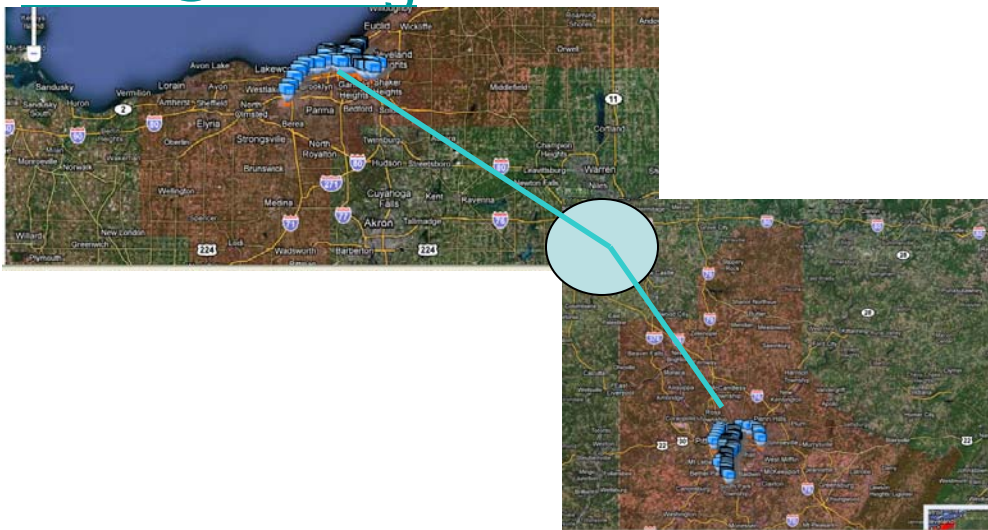
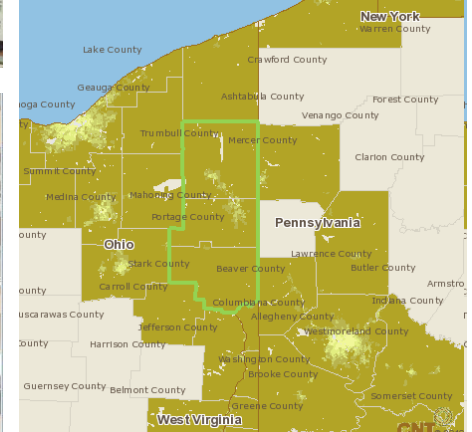
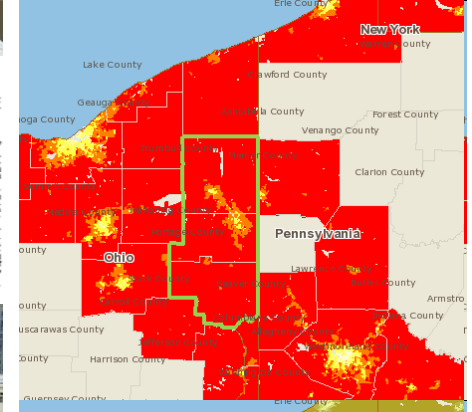
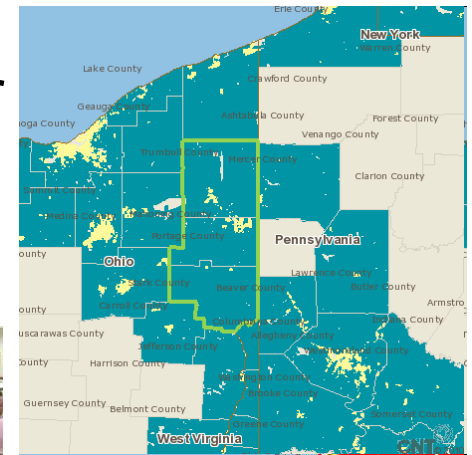
December 7, 2010

<http://htaindex.cnt.org>

scott@cnt.org



Chicago Tribune
 Skip the car, buy a house
 There's a lot of hand wringing nowadays about suburban sprawl and the need for "smart growth." But like the western world's doing much about it. Much of the home-buying public still opts for wilderness along the metropolitan fringe. And despite landfills, sprawling new cities and regional growth, political realities in Illinois militate against significant governmental action.
 Now comes a modest but innovative pilot program that just might make a small difference. Skanska, a Swedish construction firm, is offering a "car-free" living "out there."
 The program is called "Smart Growth" and it has been developed by environmental groups such as Chicago's Center for Neighborhood Technology, who, in 2004, won the government's contract to design and build a new apartment complex in the city's Loop. The program is called "Smart Growth" and it has been developed by environmental groups such as Chicago's Center for Neighborhood Technology, who, in 2004, won the government's contract to design and build a new apartment complex in the city's Loop. The program is called "Smart Growth" and it has been developed by environmental groups such as Chicago's Center for Neighborhood Technology, who, in 2004, won the government's contract to design and build a new apartment complex in the city's Loop.



When Coffee Came to London...

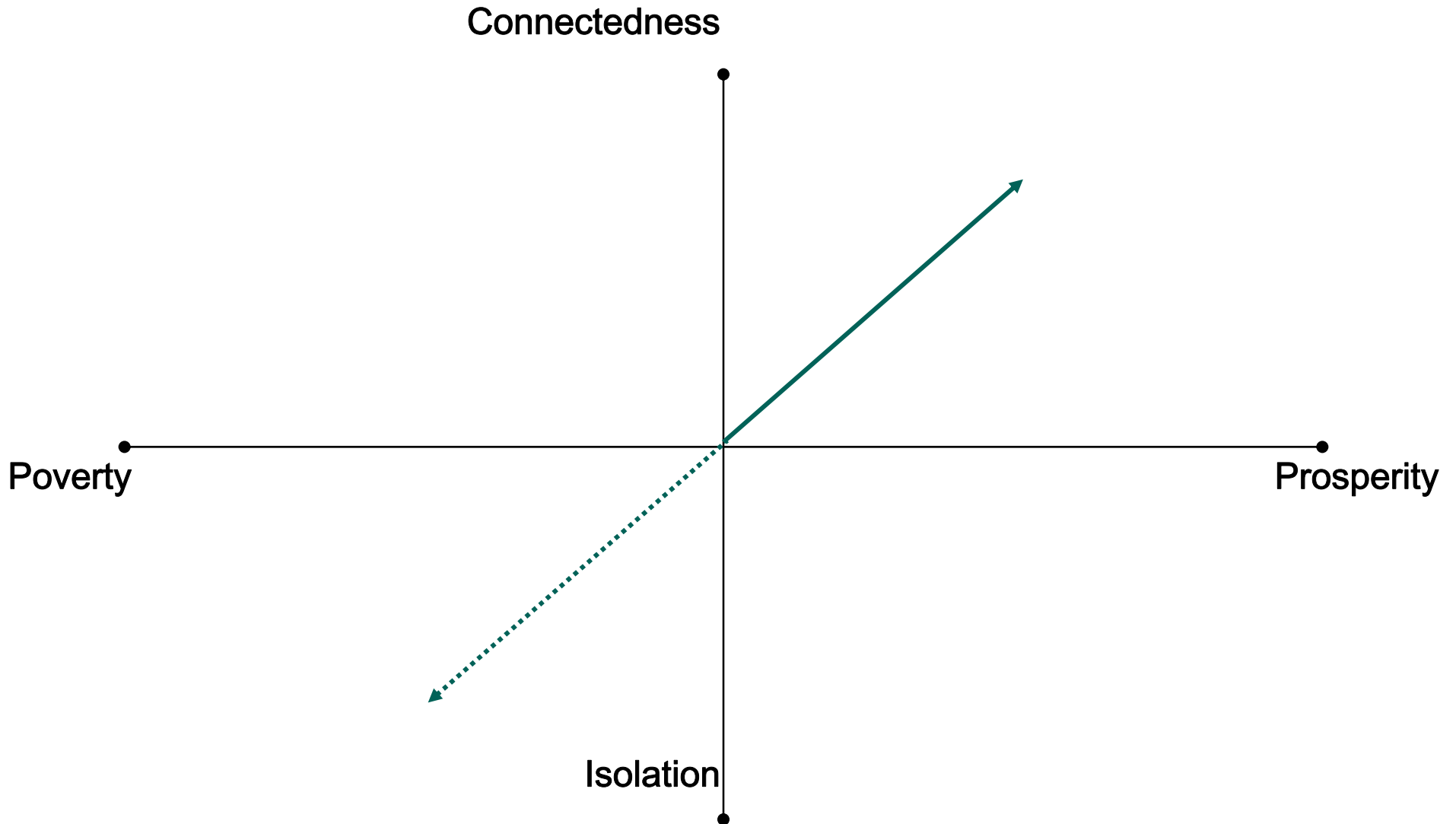


Elements of Successful Regional Strategy



- Reconnection between disconnected communities and to the larger economy
- Performance and productivity—It's a resource-constrained world and income is dropping—leave no efficiency behind
- Inclusion—Leave no community behind
- Acceleration—No time to waste

What a Nourishing Economy Does— Reduces Risk, Increases Gain



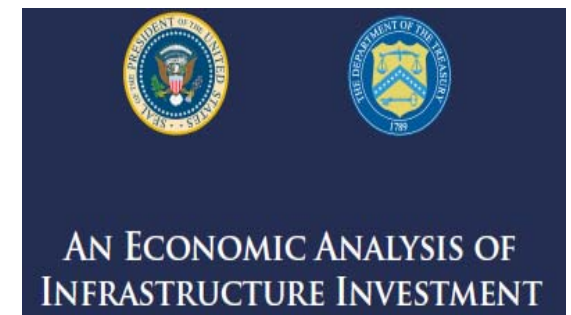
The Challenge Ahead— Regional Readiness



April 2009



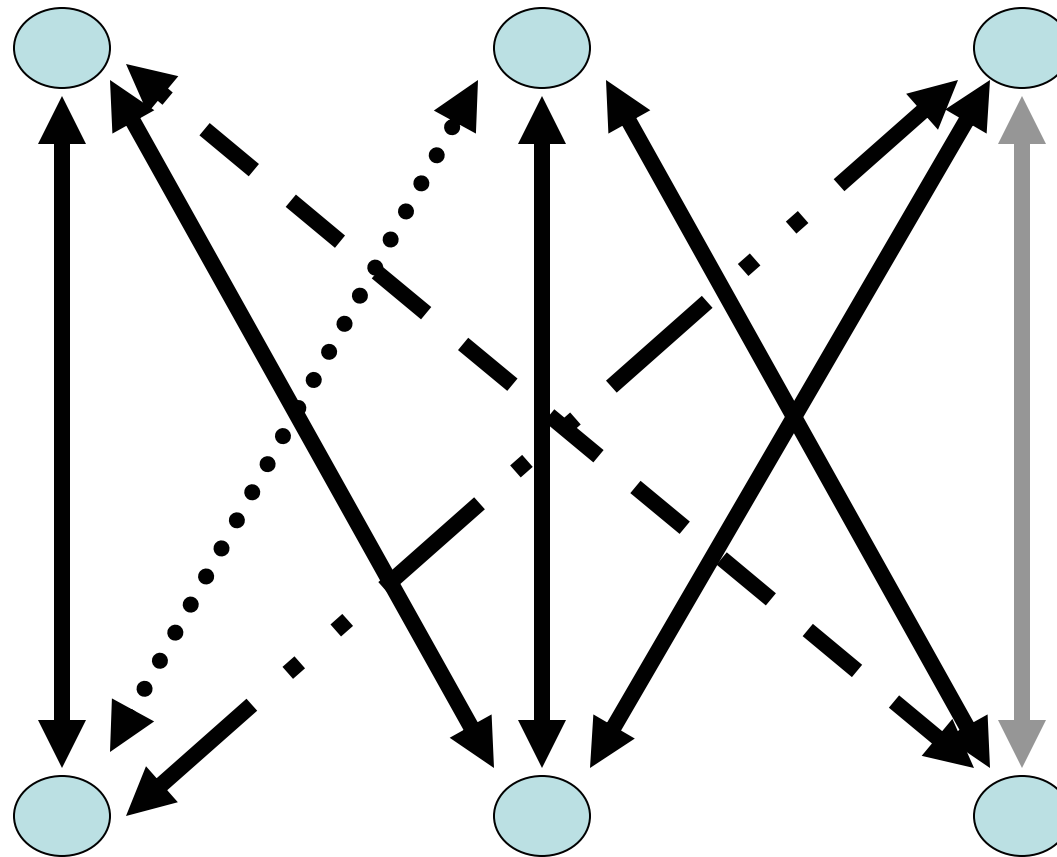
October 2010



“Affordability, Value Creation + Capture, Job Creation +Support”

- Inter-Agency Partnership for Sustainable Communities- Redefining Affordability
- HUD—New Office Of Sustainable Communities—both EE and Location Efficiency or LE
- USDOT—Likely New Program in Livable Communities
- Congress—Proposed Livable Communities Act will make funds available
- New Funds Will Be Regionally Focused and Competitive
- October 2010—Announced intent to pursue \$50 Billion infrastructure investment

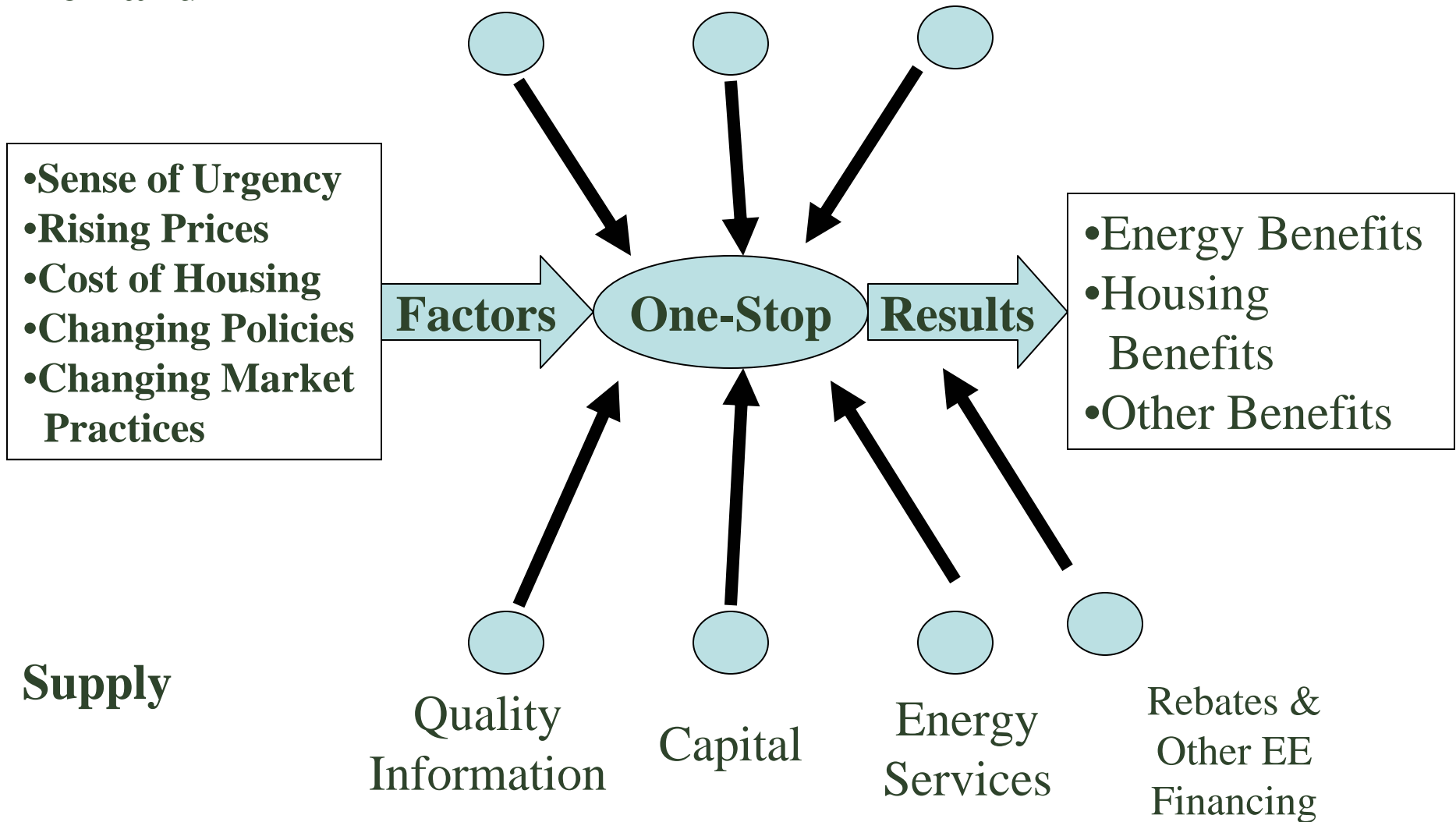
The Need for One-Stop Shopping: The Current Unorganized Market



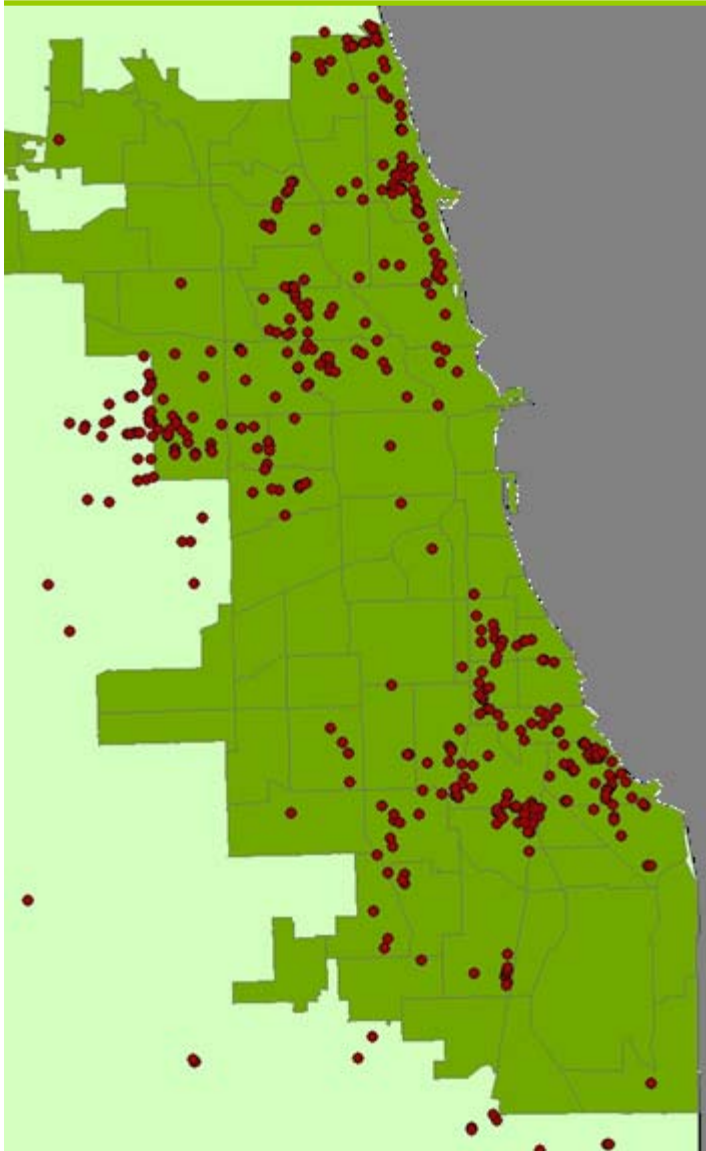
Middle Class Task Force report noted need for audits, contractors & services, And financing—but didn't call for coordinated one-stop service

The Need for One-stop Shopping: A Better Model for the Residential Sector

Demand



CNT energy savers



Energy efficiency solutions for Chicago-area apartment buildings

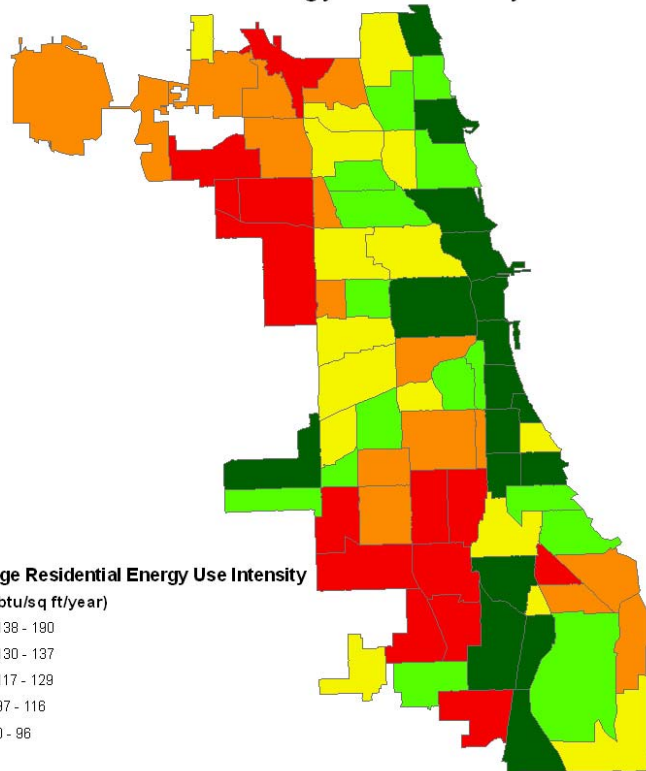
- 10,000 units since 2008, one-half retrofitted
- 30% average energy savings
- Part of Preservation Compact devoted to preserving affordable rental housing in northern Illinois—in process of being copied in a dozen other regions

CR3 (Chicago Regional Retrofit Ramp-up) aka Better Buildings Approach

- Regional data that is integrated in EE, finance and workforce networks locally and nationally
- Program design, implementation and EM&V that draws on extensive data of regional energy consumption patterns and building stock
- Deep understanding of market sector barriers and solutions through extensive implementation experience with existing programs
- Utilizes community-based approaches and networks
- Employs a market sector approach to each product (single family, mf, C&I)

Understanding the Data – Residential Single Family

Chicago Community Areas:
Residential Energy Use Intensity



Average Residential Energy Use Intensity

EUI (kbtu/sq ft/year)

- 138 - 190
- 130 - 137
- 117 - 129
- 97 - 116
- 0 - 96



Bungalow



Colonial



Frame Cottage



Newer Luxury



Tudor



Ranch



Victorian



Townhome

Regional Energy Data Entities are Needed



- Normalizing to national standards isn't as useful to consumers as regional comparisons.
- National building energy data collection/analysis:
 - Is too expensive to collect at scale (2005 RECS single family = 3,102 sf homes; East North Central Region = 432)
 - Not enough accuracy with small sample (gas use in Chicago region is 40% higher than RECS values)
- Regional entities bring needed:
 - In depth knowledge of energy consumption patterns and local building stock
 - Understanding of regulatory environment, workforce & finance needs
 - Partnerships with utilities, housing, workforce & community networks

CNT - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://myhomeeq.com/development3/

Most Visited Windows Marketplace Customize Links

Norton Norton Safe Search Search Cards & Logins

MyHomeEQ.com Update for CNT Energ... Google Image Result for http://solarso... CNT

My Home EQ Improving the Value, Comfort and Energy Savings of Your Home

BLOG ABOUT THIS SITE FAQs LOG IN SIGN UP

How much energy does my house use?

Home Find a Contractor Financing Options Local Information Success Stories Dashboard

Home > Parent Page > Current Page

How much energy does my home *really* use?



STEP 1

Save money and live more comfortably by lowering your energy usage

Understanding your actual energy usage is the first step in making your home more comfortable, efficient, and valuable. We'll recommend home improvements that have both immediate and long lasting impact and then we'll help you with the details of making the change. That's why we're here.

Reasons to Search

- > Lower Your Energy Costs
- > Make Your Home More Comfortable
- > Find Out Which Home Improvements are Right for You
- > Make Your Home More Green

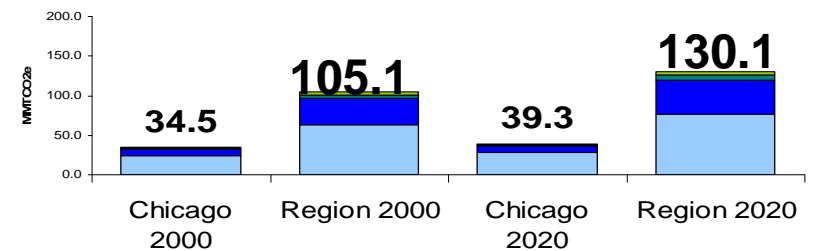
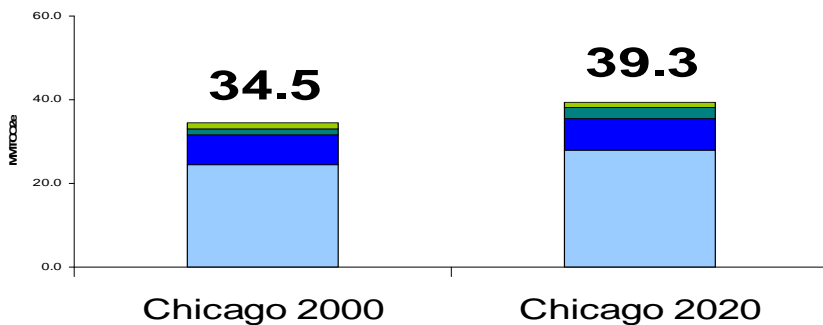
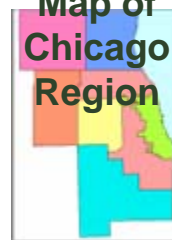
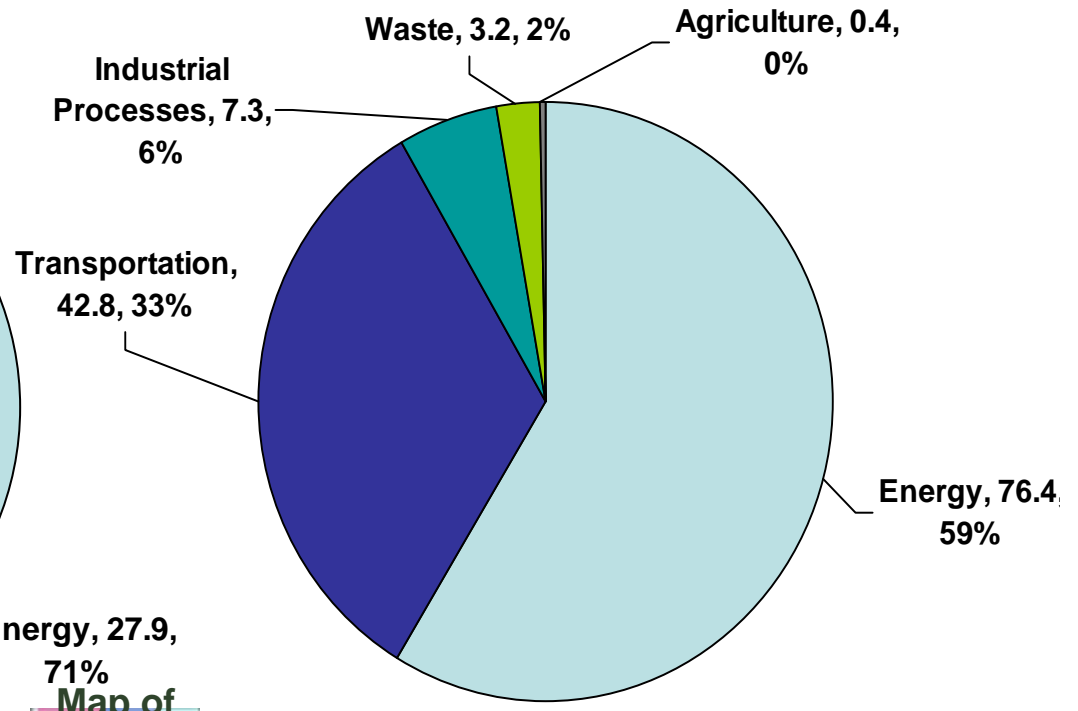
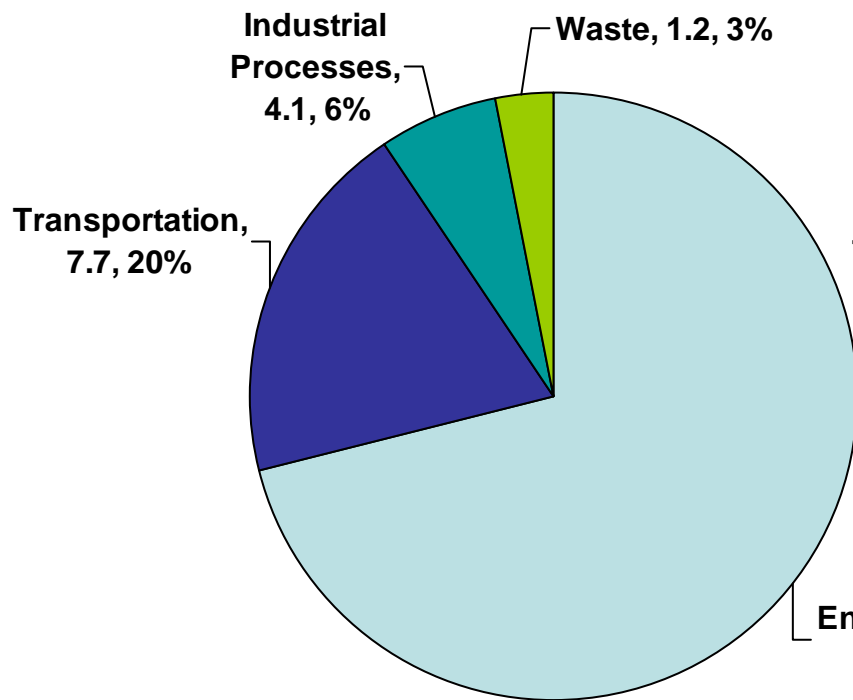
<p>Potential Energy Savings/Year BASED UPON ZIP CODE 60617</p> <p>\$151</p>	<p>Your Home EQ Score</p> <p></p>	<p>Rebates and Tax Credits</p> <p> It's simple. A more energy efficient home means a lower MyHomeEQ and bill. That also means a cozier home with better efficiency.</p>
-----------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Done

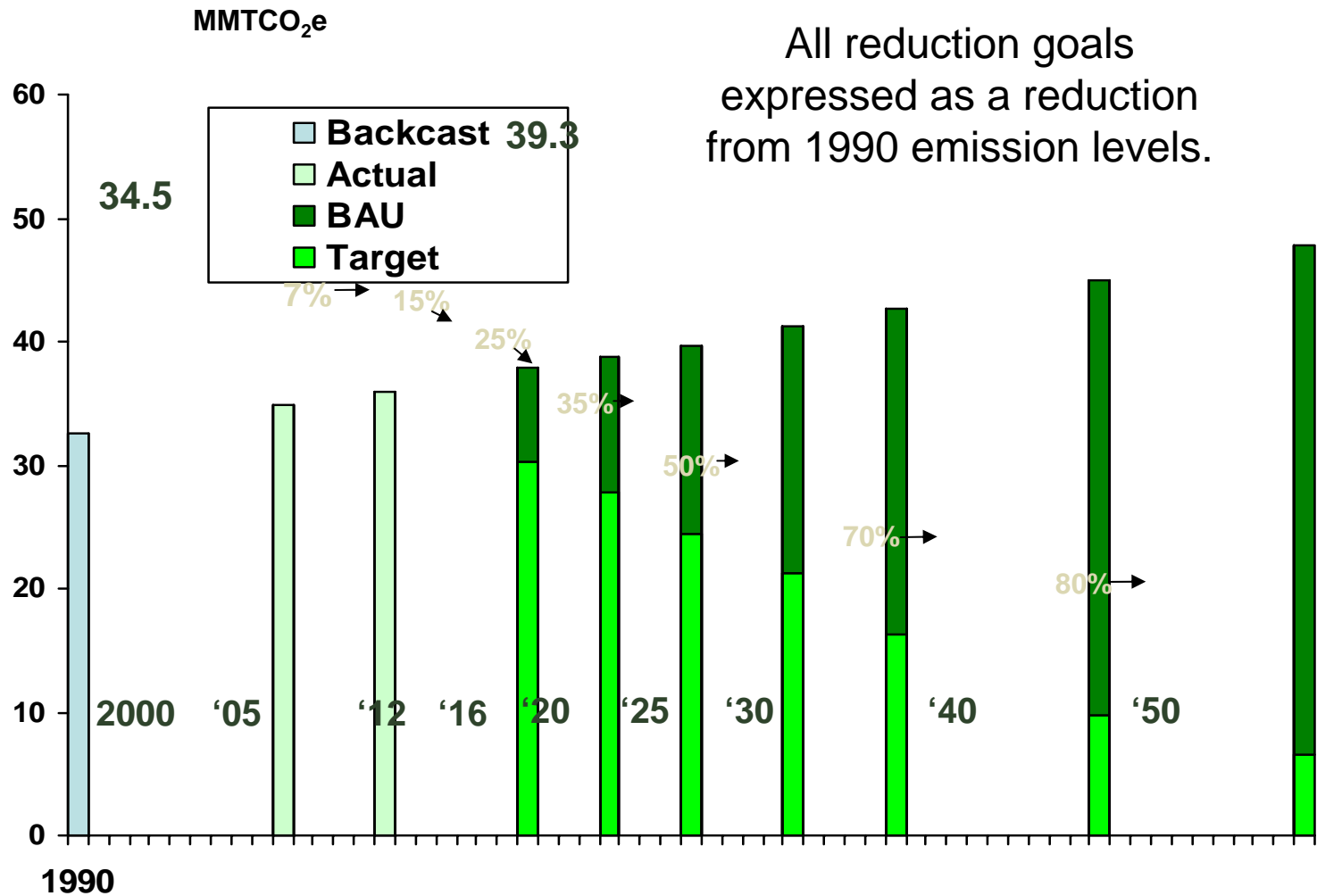
Some Observations from Local Climate Protection



2020 Chicago vs. Metro Region Transportation GHGs Grow Twice as Fast in Suburbs



Chicago Climate Action Plan Reduction Goals



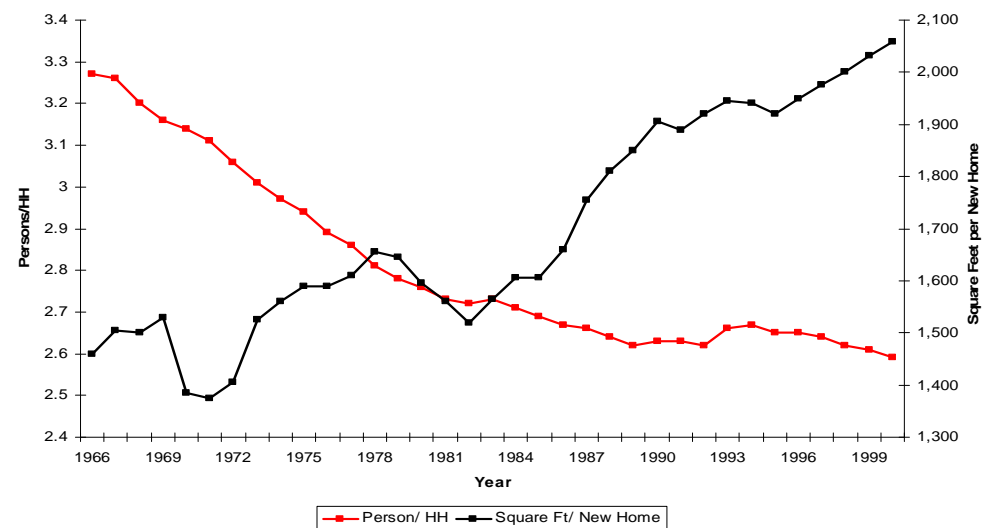
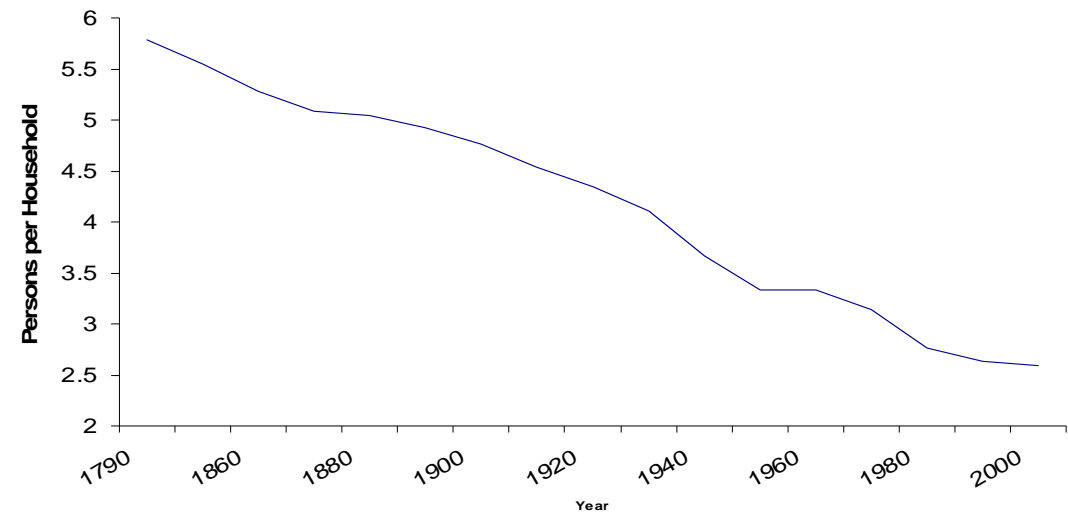
Typical US Household Energy Use



- 100 Million BTUs per Year for Lighting, Heating, A/C, Equipment
- 22,000 Vehicle Miles per Household Per Year
- At 25 MPG, 17,600 VMT = 100 Million BTUs
- At 20 MPG, 15,000 VMT = 100 Million BTUs
- Household Transportation Energy as least as important as Home Energy purposes
- Without counting transportation energy, creates a “driving to green buildings” challenge

Demographic & Price Trends Promote Urbanism and Demand Reduction

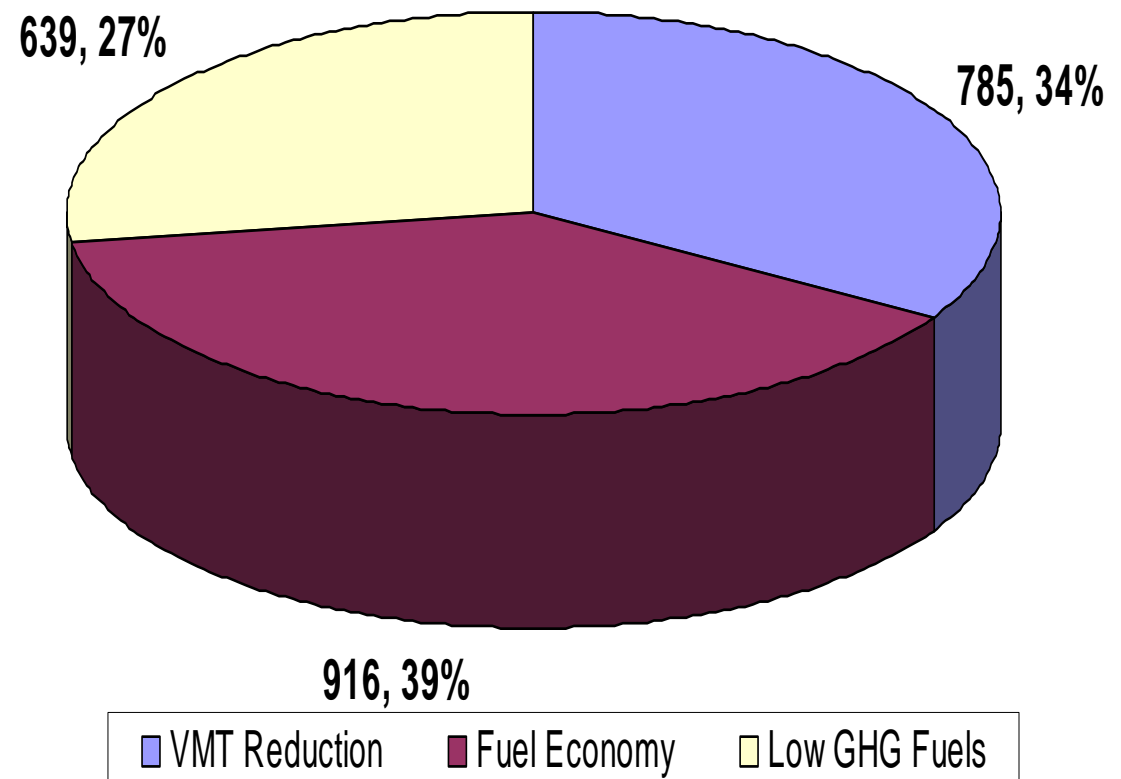
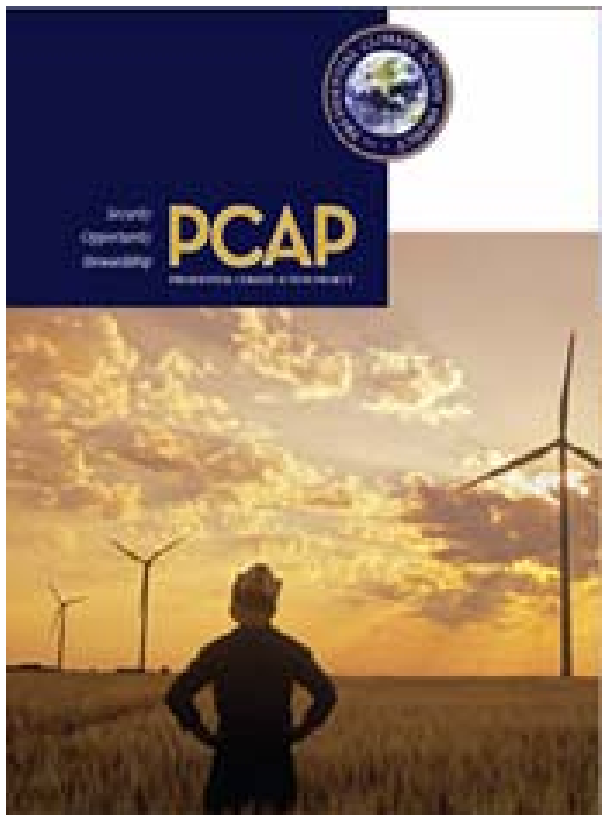
- Continuous drop in household size since 1790
- HH Size dropped from 3.3 to 2.6 1960-2000 while home size built increased 1400-2100 square feet
- Aging in place
- “Married w/kids” only 23% of total
- Rising energy and gas prices
- Limited public funds to keep sprawling



Economic Risk— Sprawl is Slowing in Chicago MSA—But Still Happening

- 1970-1990, land consumption up 55% vs population increase 4%; *14 to 1*
- 1982-1997, land consumption up 25.5% vs population increase 9.6%; *2.7 to 1*
- 1990-2001, land consumption up 11% vs population increase of 33 %; *0.33 to 1*

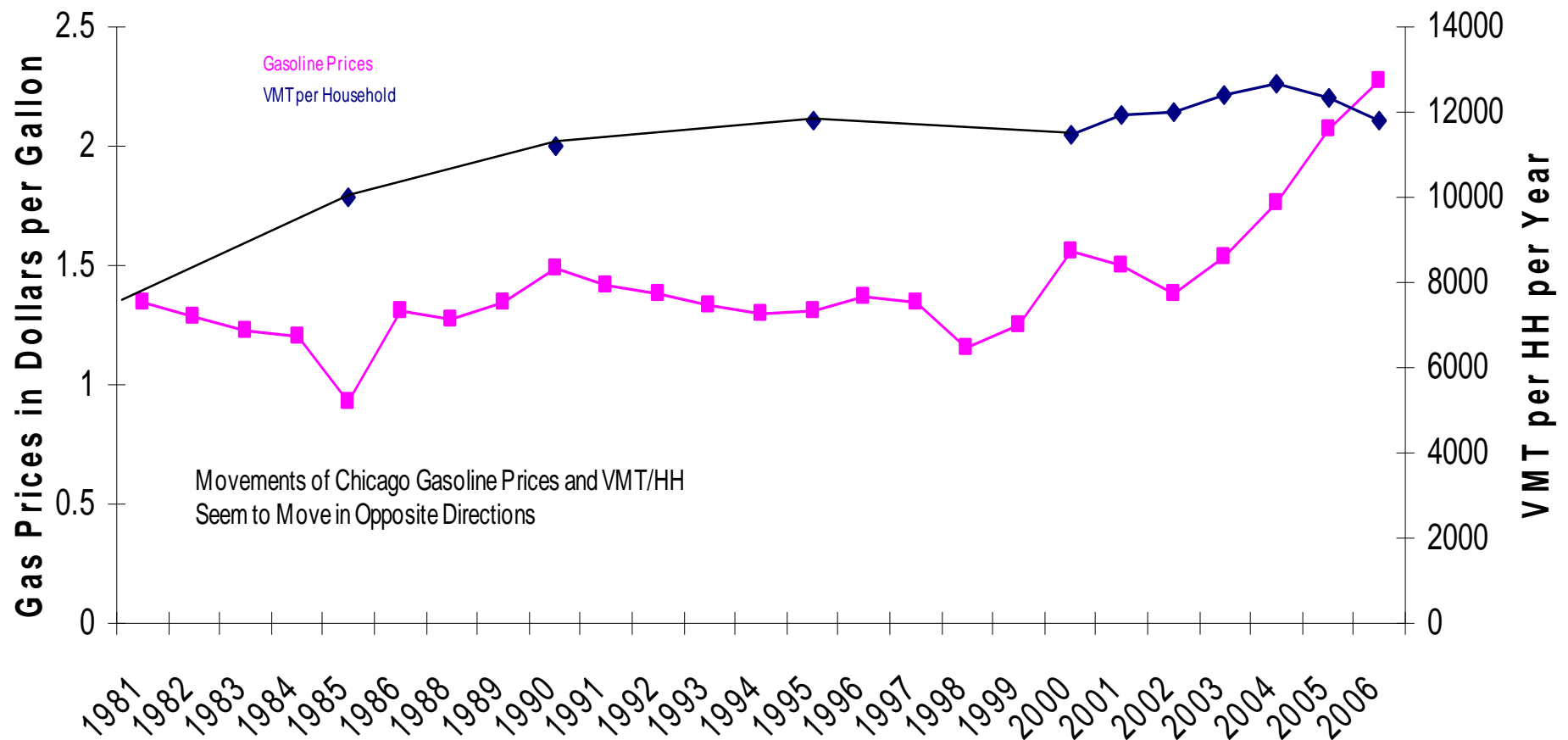
Passenger CO2 Savings from Reducing 1% Annual VMT, 4% Annual Fuel Economy— A 1.25% annual VMT reduction == fuel economy



Chicago Household Demand Does Respond to the Cost of Driving

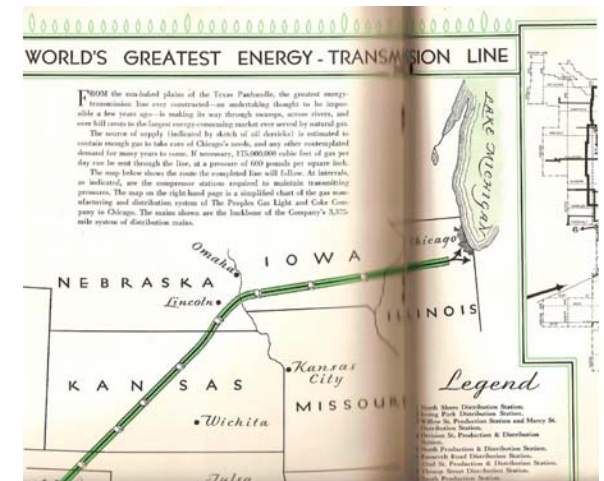
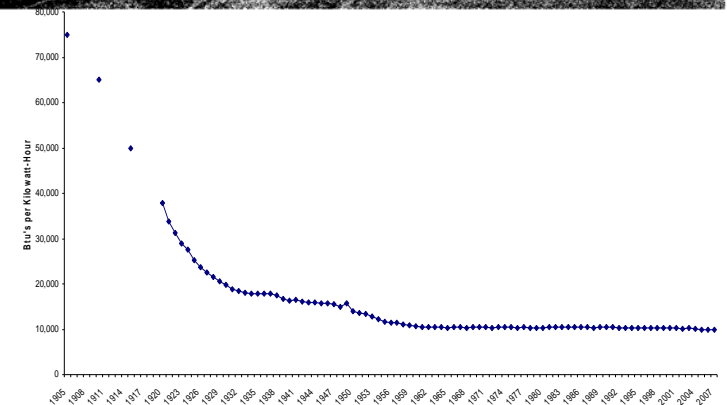
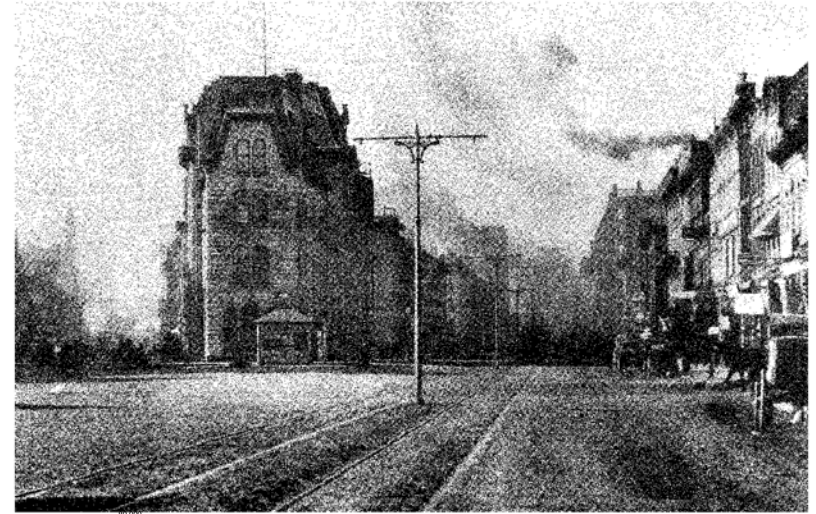


VMT per HH vs. Chicago Gas Prices 1980-2006



A Visible Sort of Problem- Smoke

- Became a matter of essential civic action
- Some improvement through combustion efficiency
- Electrification of transportation a factor: $\frac{1}{4}$ of load in 1913
- **Entire region's buildings retrofit by 12,000 workers in 1931**



We Had It Right Once

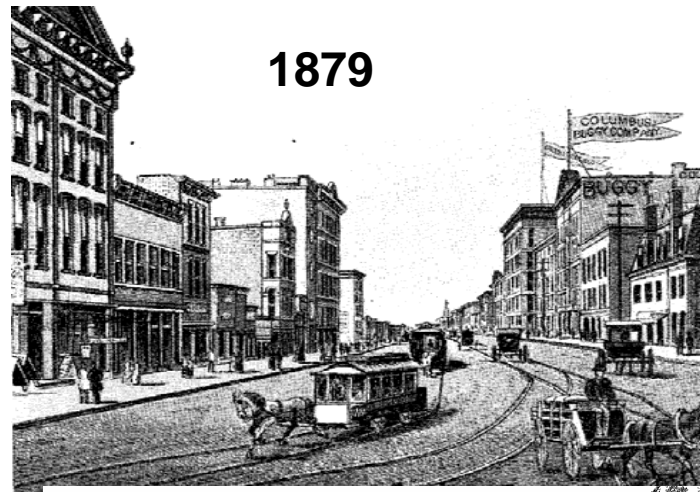


- Transportation only 3-5 percent of HH expenditures
- ***Every city of 5000+ had streetcars and interurban, more had steam RR service—did this between 1887 and 1902***
- High household savings rate
- Provided economy of scope—unit costs were lowered the more the number of network routes connected

Columbus, Ohio Broad & High Peak-Value at Streetcar Intersection

Note

- Increasing Density,
- Mixed-Use Development,
- and
- Human Traffic Control Umbrella

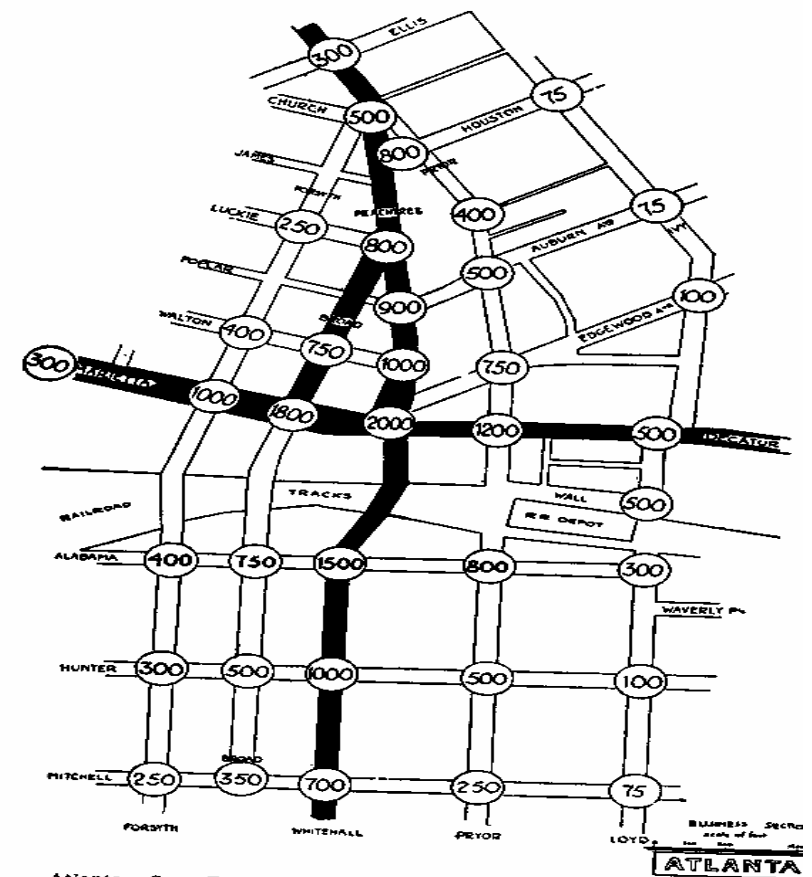
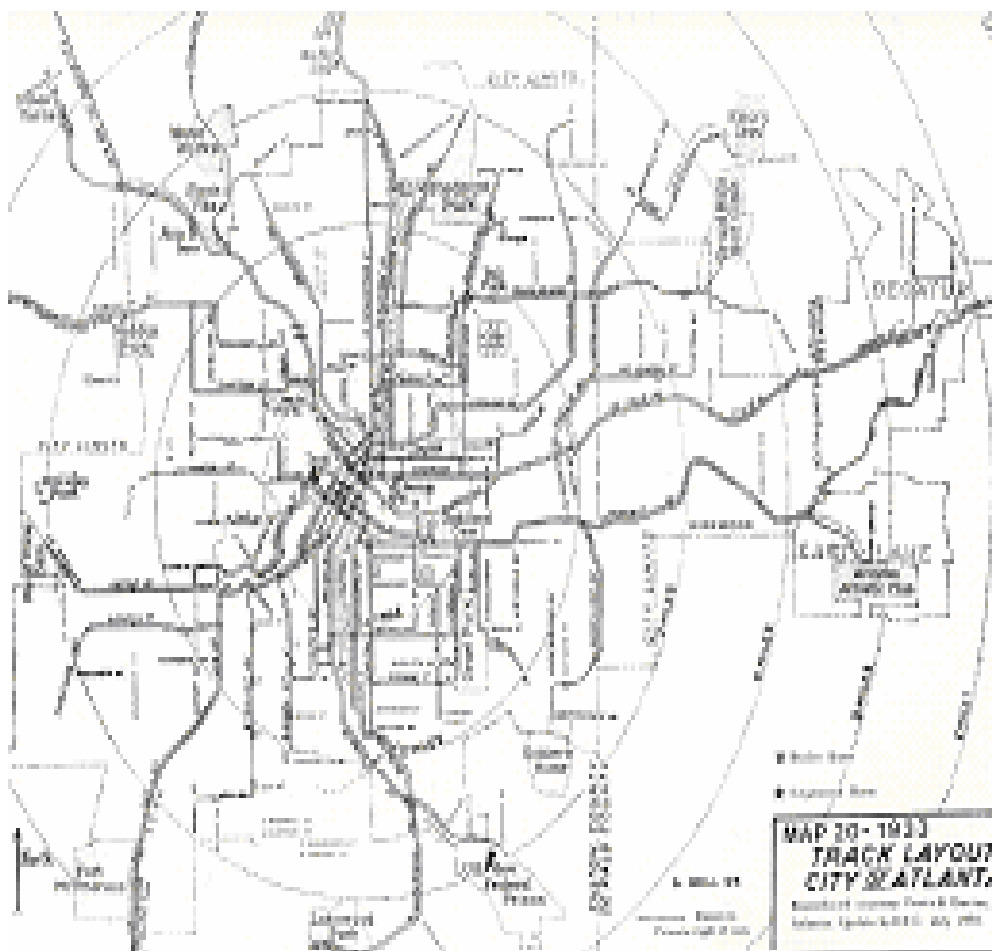


Columbus, O. Residence section. Figures represent value of corners, for lot of average width and depth, in dollars per front foot.

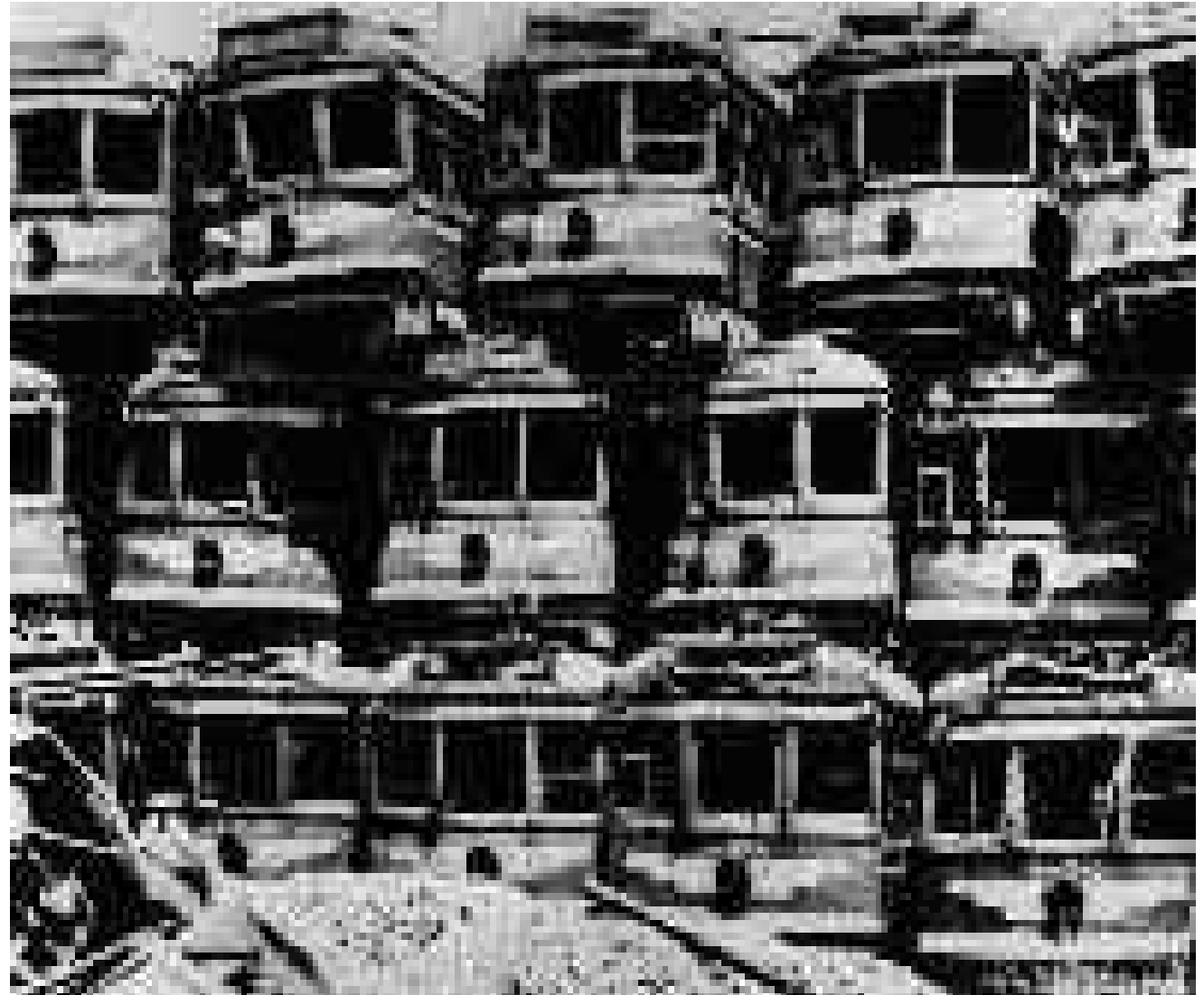
Transparency Drove the Market Through 1930, Note Peak-Value at Peachtree, Marietta & Decatur

- Transit-Oriented Atlanta

- Economically Legible Atlanta



Most Places Abandoned Their Transit Systems



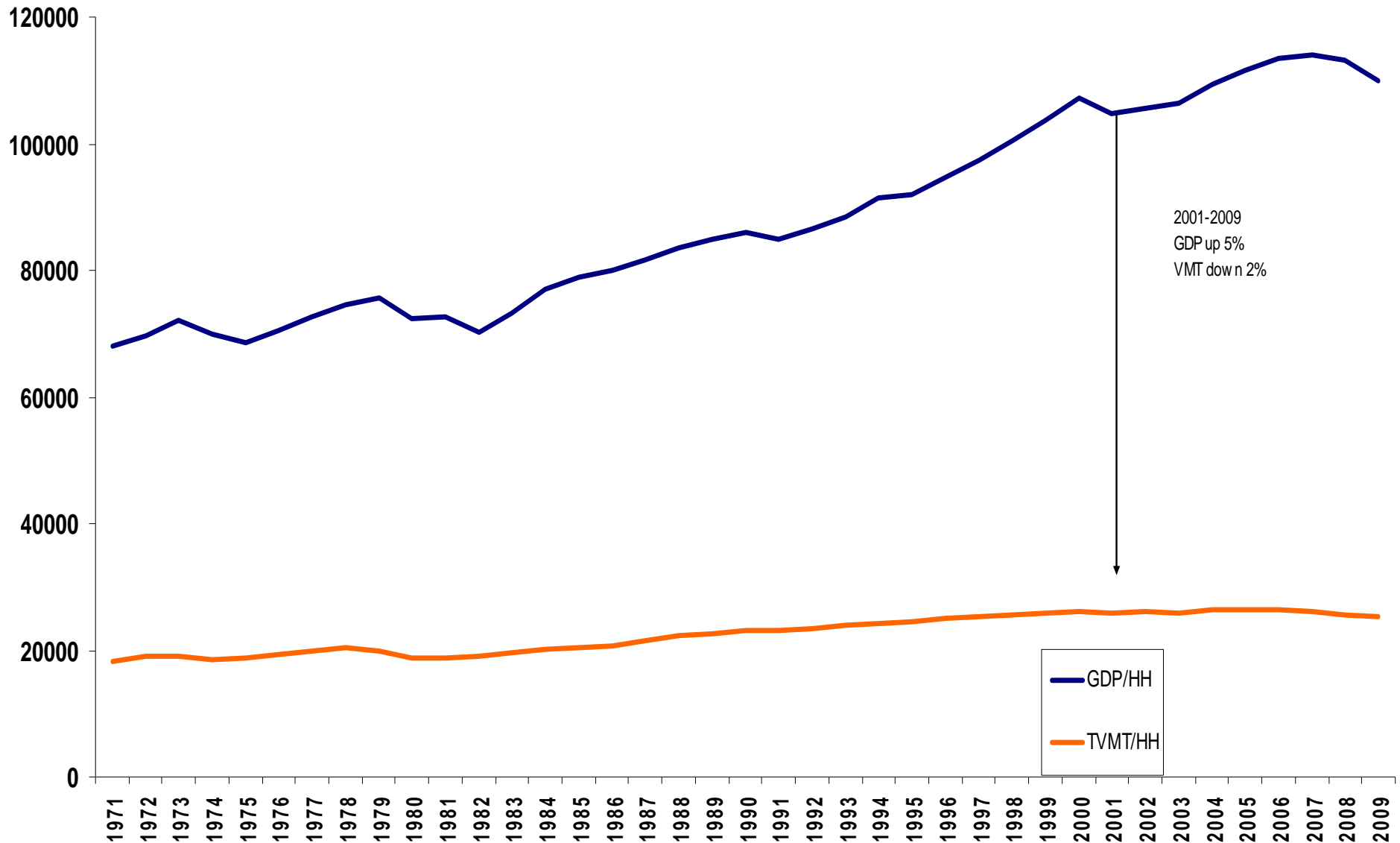
And Public Policy Favored a Different Vision



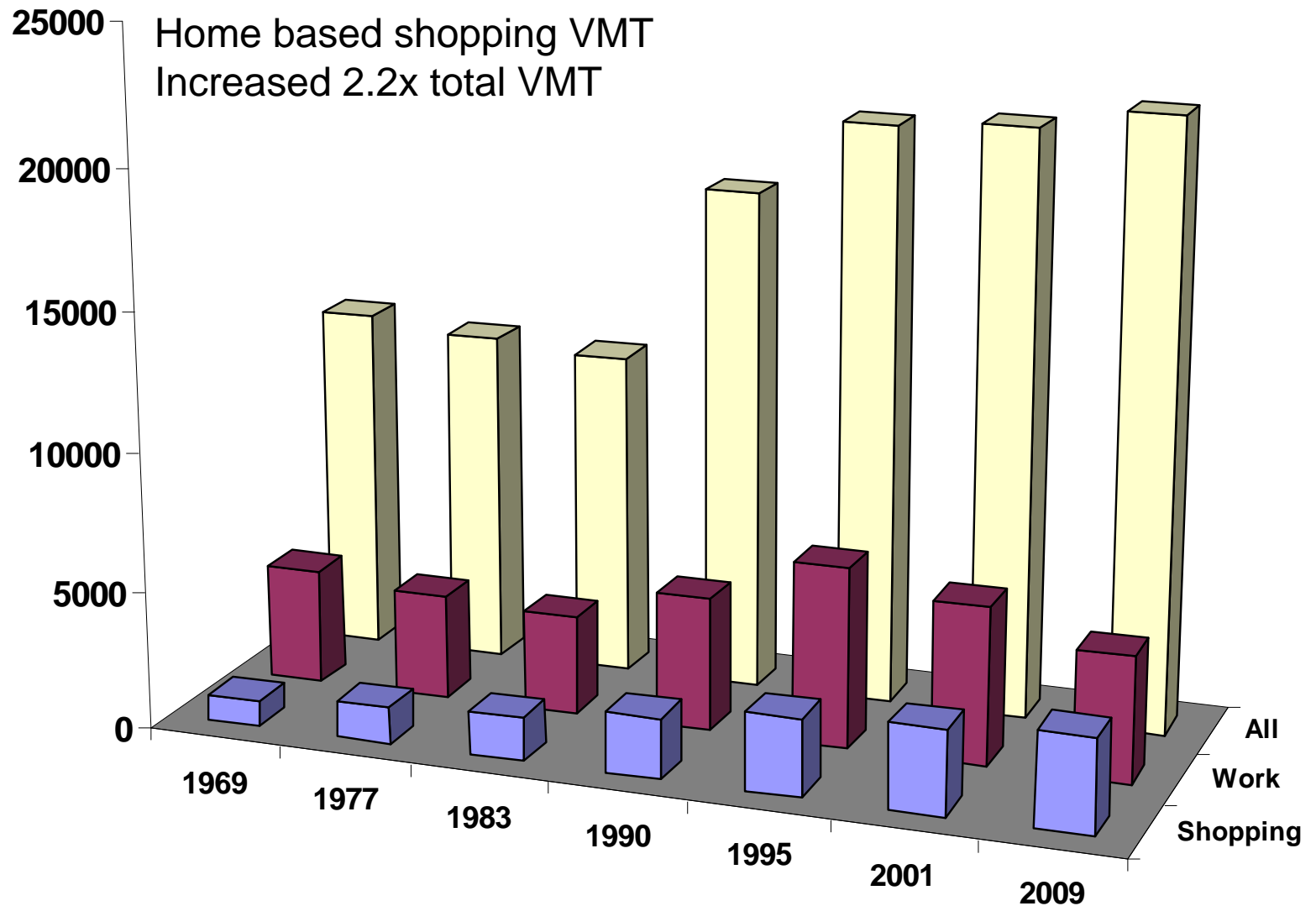
Thinking About Transportation



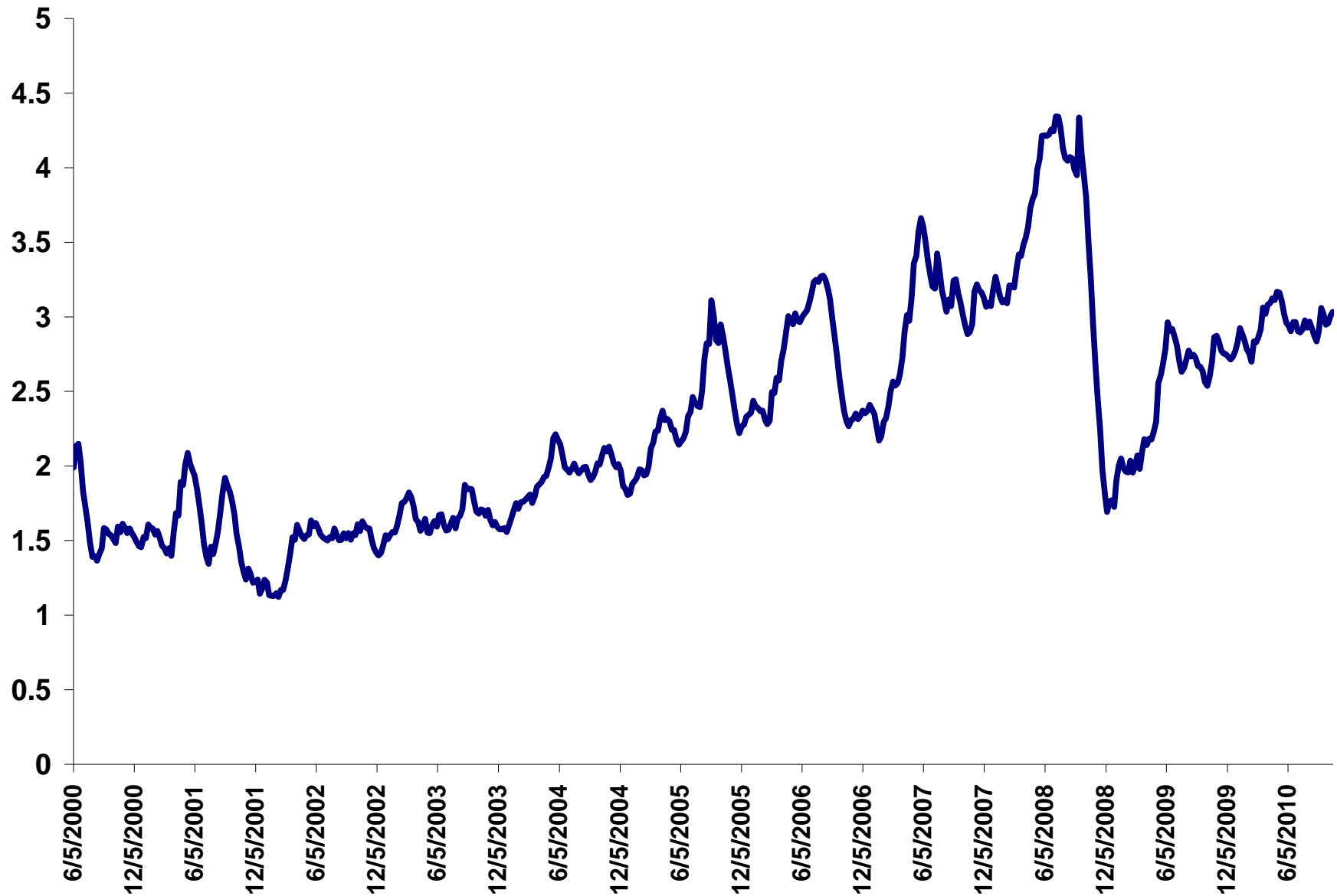
Modestly Good News—Total VMT/HH vs GDP per HH 1971-2009



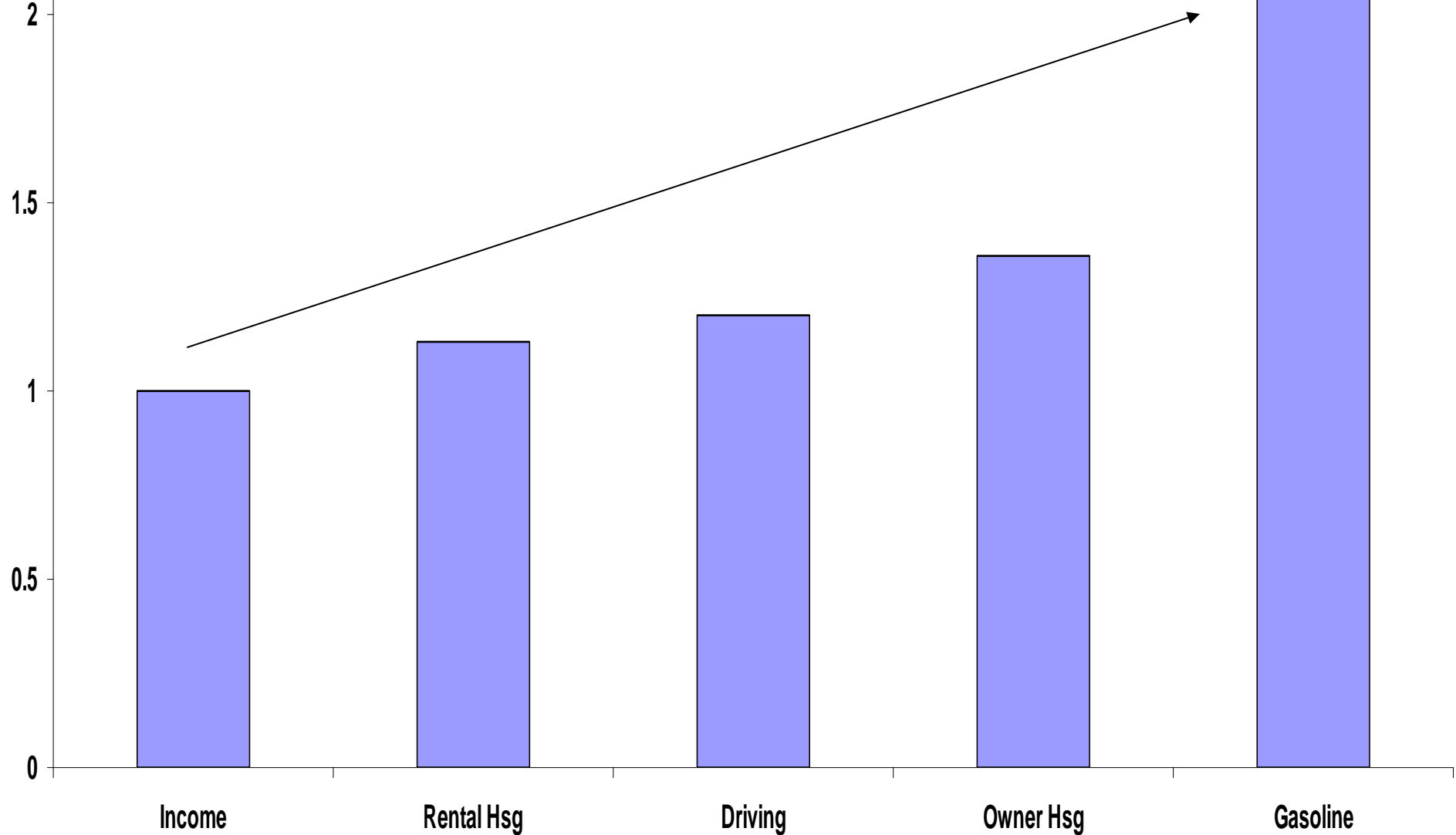
Overall growth in household VMT level; work-trips level or down; other purposes such as shopping significantly increased



Change in Chicago Area Gas Prices from June 2000 to Present, \$1.50 to \$4.30 in 2008, Note Drop and Rebound



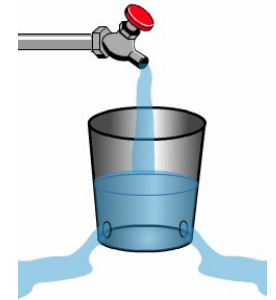
2000-2008 Gas Costs Soared 2.4 Times Faster Than Home Owner Costs, 4.4 Times Rents & 8 Times Faster than Income



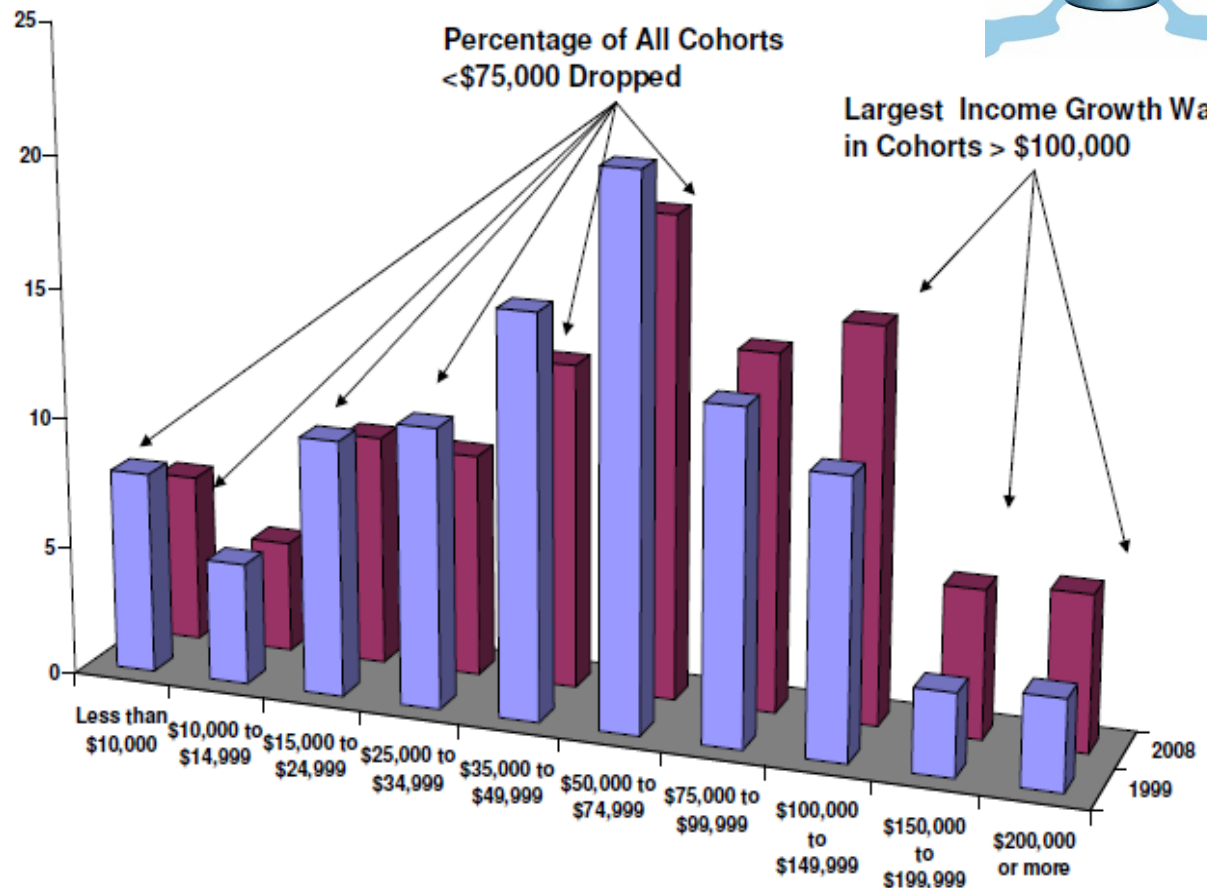
Chicago MSA 1999-2008

Median Grew from \$51046 to \$61295

Mean Grew from \$67768 to \$82623



- Growth in median income was \$854/month
- Growth in H+T costs was \$803
- Left just \$51/month for all other expense increases, e.g., food, medical, mortgage resets
- Better in places with more transport choice, worse in the exurbs



***What Is Location Efficiency and
How Can It Help Address the
Perfect Storm of Climate Change
and Economic Recession?***

An Urban Asset: Location Efficiency = A Measure of Accessibility & Convenience & a Spatial Analogue to Thermodynamic Efficiency

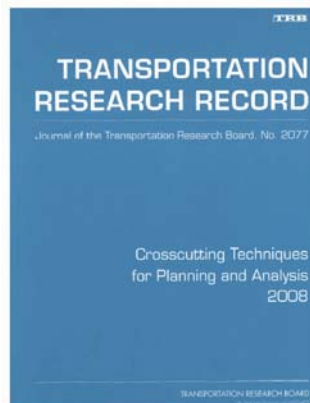
- Density, Transit Access (Proximity, Frequency, Connectivity), and Amenities Determine Transportation Demand
- Statistics Used to Estimate Likely Travel Demand
- Demand is Verified by Measuring Vehicle Ownership and Extent of Use
- Demand is Then Valued in Dollars and Cents

How is Location Efficiency Determined- Explain Using Regression? (Memorize This...Or.....)



$$\frac{Veh}{Hh} = 4.722 \left(22.520 + \frac{H}{RA} \right)^{-0.3471} \left(1 - e^{-\left(0.00011 \frac{\$}{P} \right)^{1.2386}} \right) \left(1 + 1.0519 \frac{P}{H} \right) (Tr + 60.312)^{-0.2336}$$

$$\frac{VMT}{Veh} = 1038 \left(60.504 + \frac{H}{TA} \right)^{-0.0419} \left(1 + 0.02759 \frac{P}{H} \right) \left(1 - 0.0704 \sqrt{Ped} \right) - 0.0174 \left(\frac{\$}{P} - 22136 \right)$$

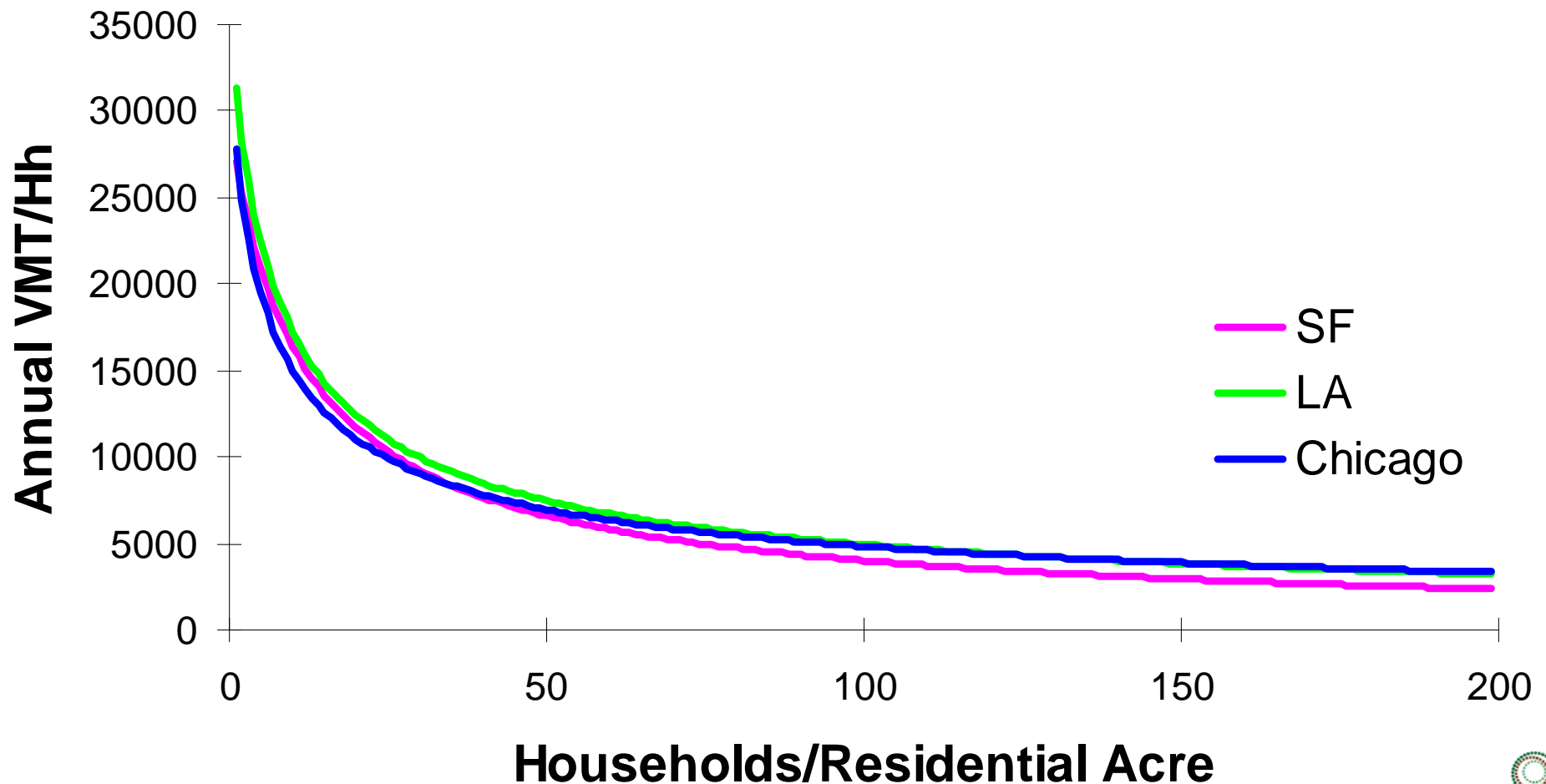


Peer-reviewed by
Brookings and National
Academy of Sciences 2008



Easily Visualized Graphically— Location Efficiency:

As Density + Transit Choice Increase, VMT Goes Down. Curve Works for 337 US Regions, London, Paris, & 37 Japanese Cities

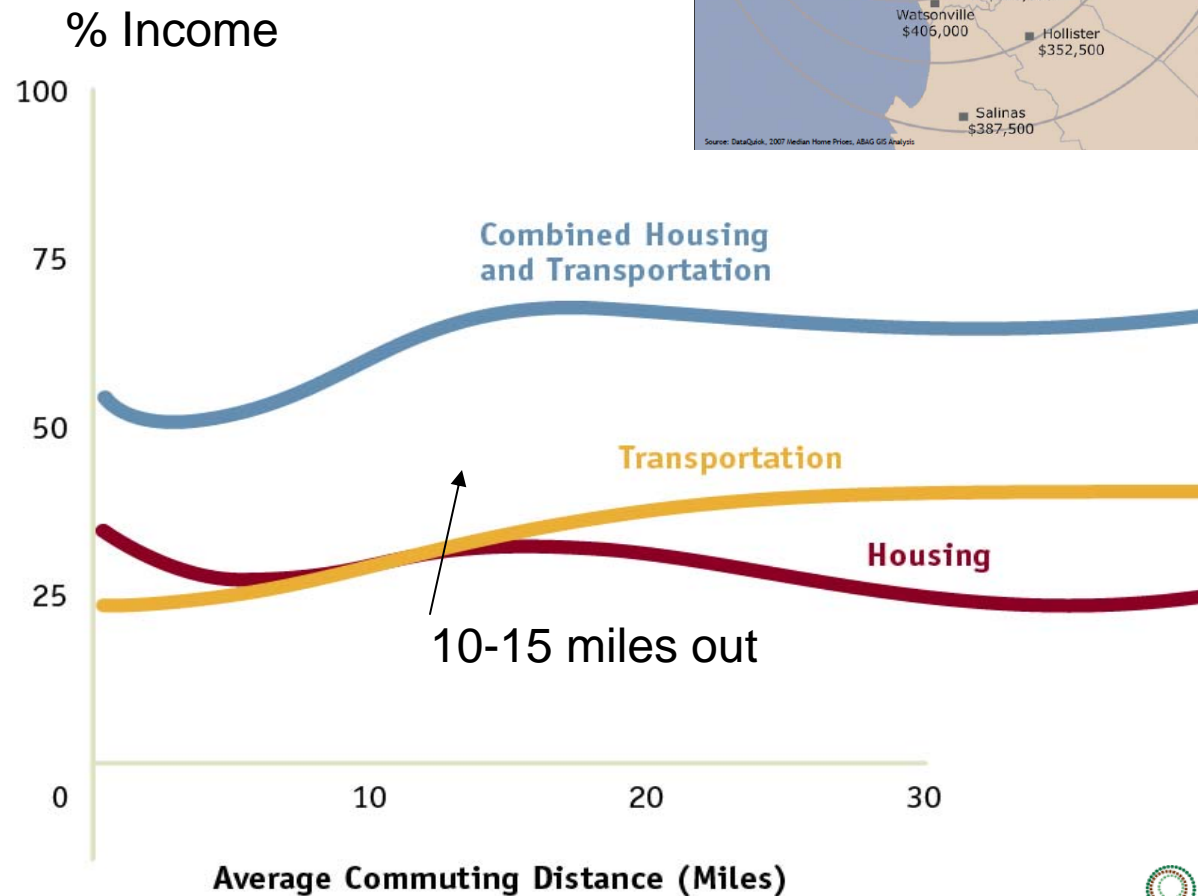
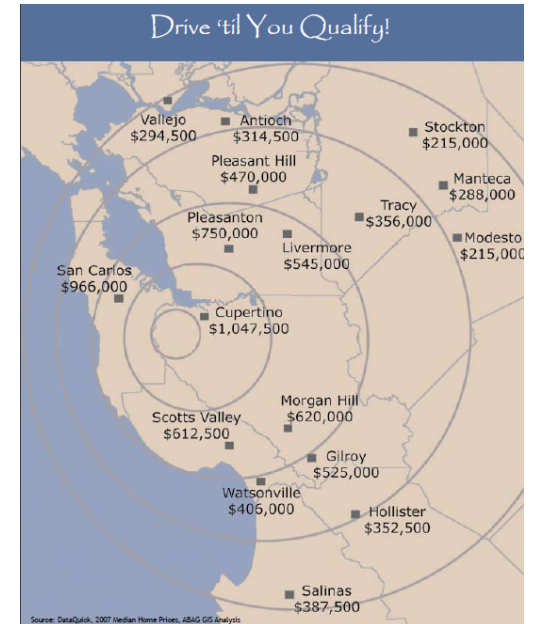


Thinking About Both Ownership and Rental Housing

- From 2005-2009
- Owner households increased vehicle ownership from 1.89 to 2.02
- Renter households stayed almost even, increasing from 1.20 to 1.22
- Homeownership rate actually dropped

Effect of 'Drive 'til You Qualify': Transport Costs Can Exceed Housing Costs for HHs Earning \$20-\$50,000

- Transportation emissions can also equal or exceed emissions from residential energy
- Creates “driving to green buildings” challenge



source: Center for Neighborhood Technology calculations.

Another Approach— Indexing Truer Affordability and Relating it to Climate Change

How Housing Affordability is Usually Calculated— Then and Now

- Historically: Traced to 19th Century ideal—A Week’s Pay for a Month’s Rent
- Today benchmark affordability is defined as housing costs/Income less than or equal to 30 Percent of target population AMI
- Problem—Doesn’t include cost of transportation

<https://htaindex.org>




The Housing Innovation Institute

Urban Markets Initiative

METROPOLITAN POLICY PROGRAM

The Affordability Index: A New Tool for Measuring the True Affordability of a Housing Choice

By Center for Transit-Oriented Development and Center for Neighborhood Technology

This brief describes a new information tool developed by the Urban Markets Initiative to quantify for the first time, the impact of transportation costs on the affordability of housing choices. This brief explains the background, creation, and purpose of this new tool. The first section provides a project overview and a short summary of the method used to create the Affordability Index. The next section highlights the results from testing the index in a seven-county area in and around Minneapolis-St. Paul, MN. To demonstrate the usefulness of this tool at a neighborhood level, the final section projects the effect of transportation and housing choices on three hypothetical low- and moderate-income families in each of four different neighborhoods in the Twin Cities. The brief concludes with suggested policy recommendations and applications of the new tool for various actors in the housing market, and for regulators, planners, and funders in the transportation and land use arenas at all levels of government.

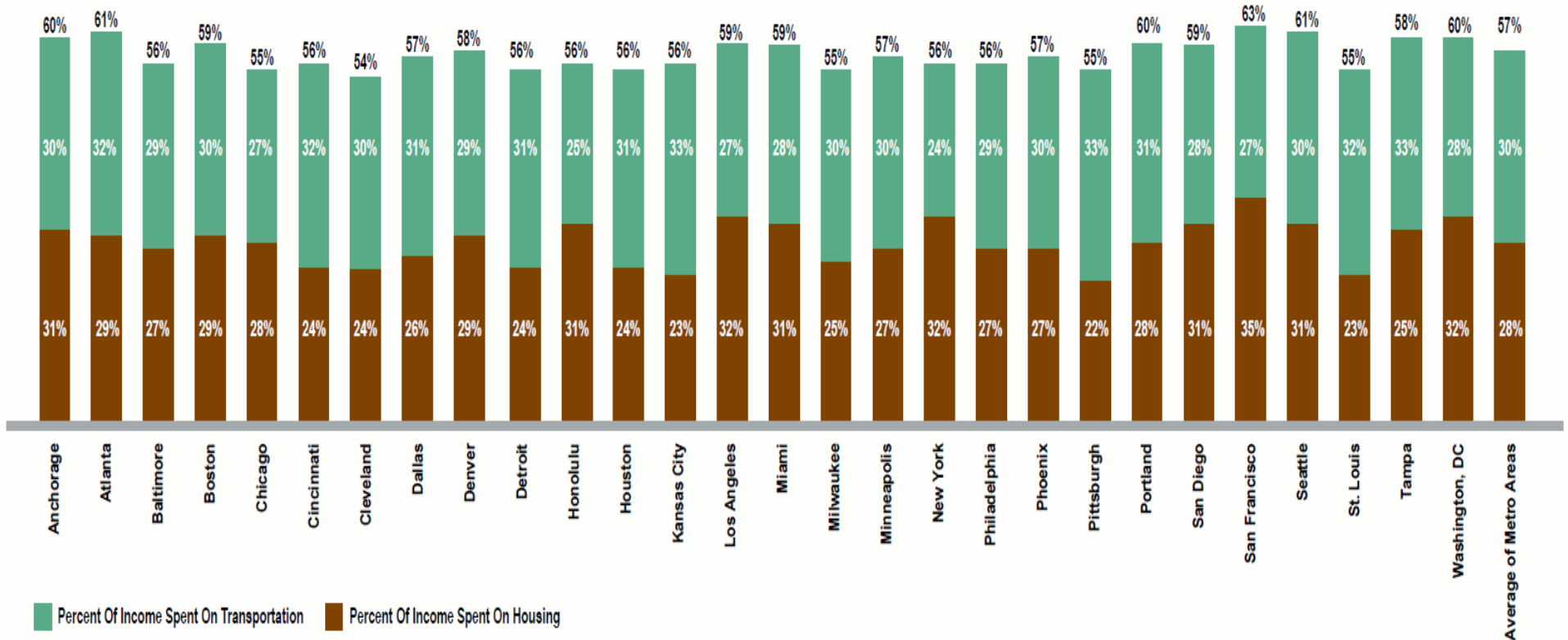
The Housing and Transportation Affordability Index is a groundbreaking innovation because it prices the trade-offs that households make between housing and transportation costs and the savings that derive from living in communities that are near shopping, schools, and work, and that boast a transit-rich environment. Built using data sets that are available for every transit-served community in the nation, the tool can be applied in neighborhoods in more than 42 cities in the United States. It provides consumers, policymakers, lenders, and investors with the information needed to make better decisions about which neighborhoods are truly affordable, and illuminate the implications of their policy and investment choices.

I. Housing and Transportation: Key Elements of the Cost of Living

The cost of living for an American family consists of many components. The two largest are housing and transportation. Housing affordability is most commonly understood as the extent to which a household's income can cover the purchase price of a home. However, the traditional definition of housing affordability may be too limited. The cost of transportation, which not currently factored in to the affordability equation, has become increasingly central to family budgets, given their choices to live

JANUARY 2006 • THE HOUSING INSTITUTE • URBAN MARKETS INITIATIVE • MARKET INNOVATION BRIEF 1

Housing + Transportation Costs Vary by Place Across the US



Percentages for working families with incomes between \$20k - \$50k



True Affordability and Location Efficiency

H+TSM Affordability Index

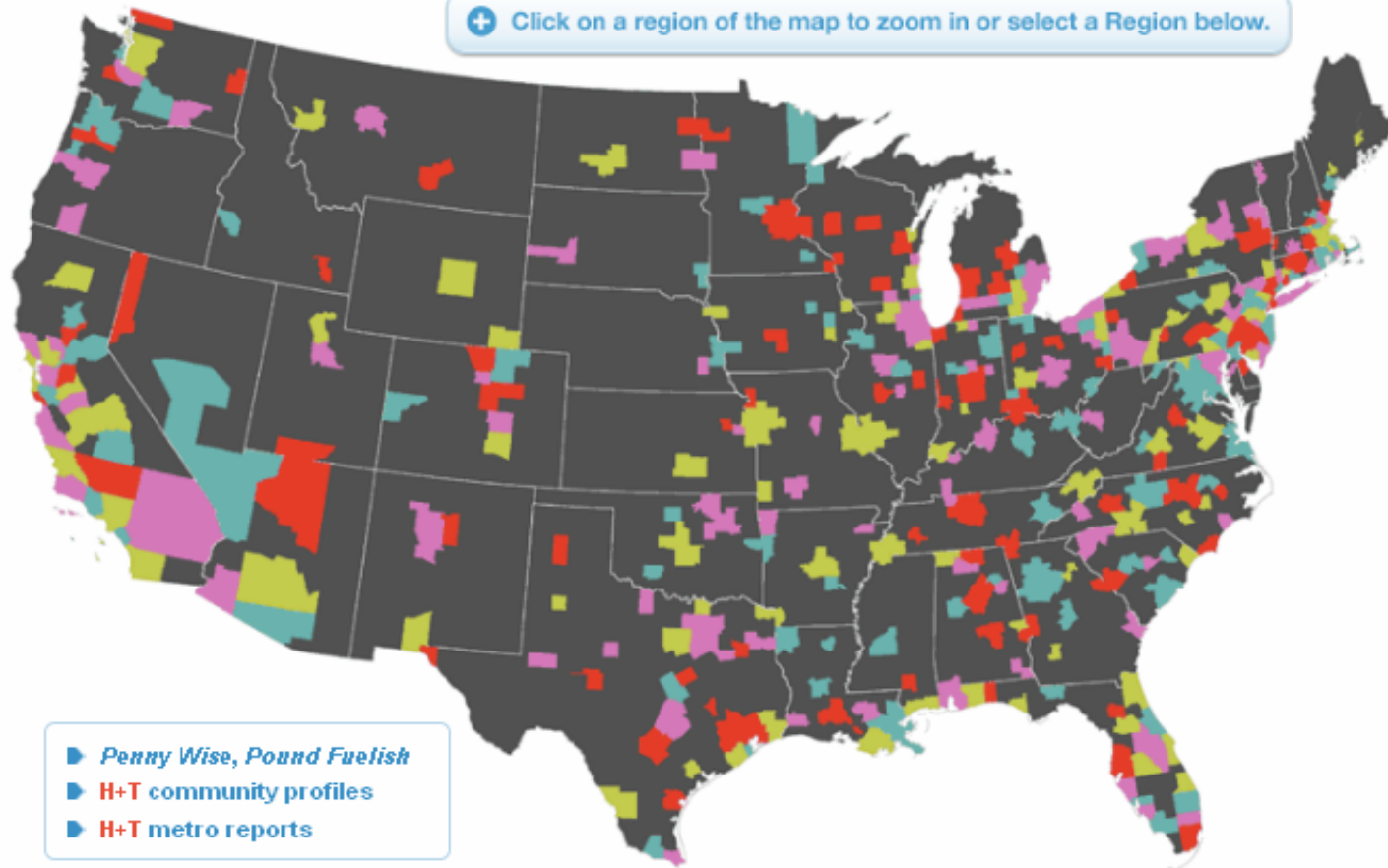
For more information about CNT please visit the CNT website.



The Housing + Transportation Affordability Index is an innovative tool that measures the true affordability of housing based on its location.

Americans traditionally consider housing affordable if it costs 30 percent or less of their income. The Housing + Transportation Affordability Index, in contrast, offers the true cost of housing based on its location by measuring the transportation costs associated with place.

[+ Click on a region of the map to zoom in or select a Region below.](#)



- ▶ *Penny Wise, Pound Foolish*
- ▶ H+T community profiles
- ▶ H+T metro reports



Alaska

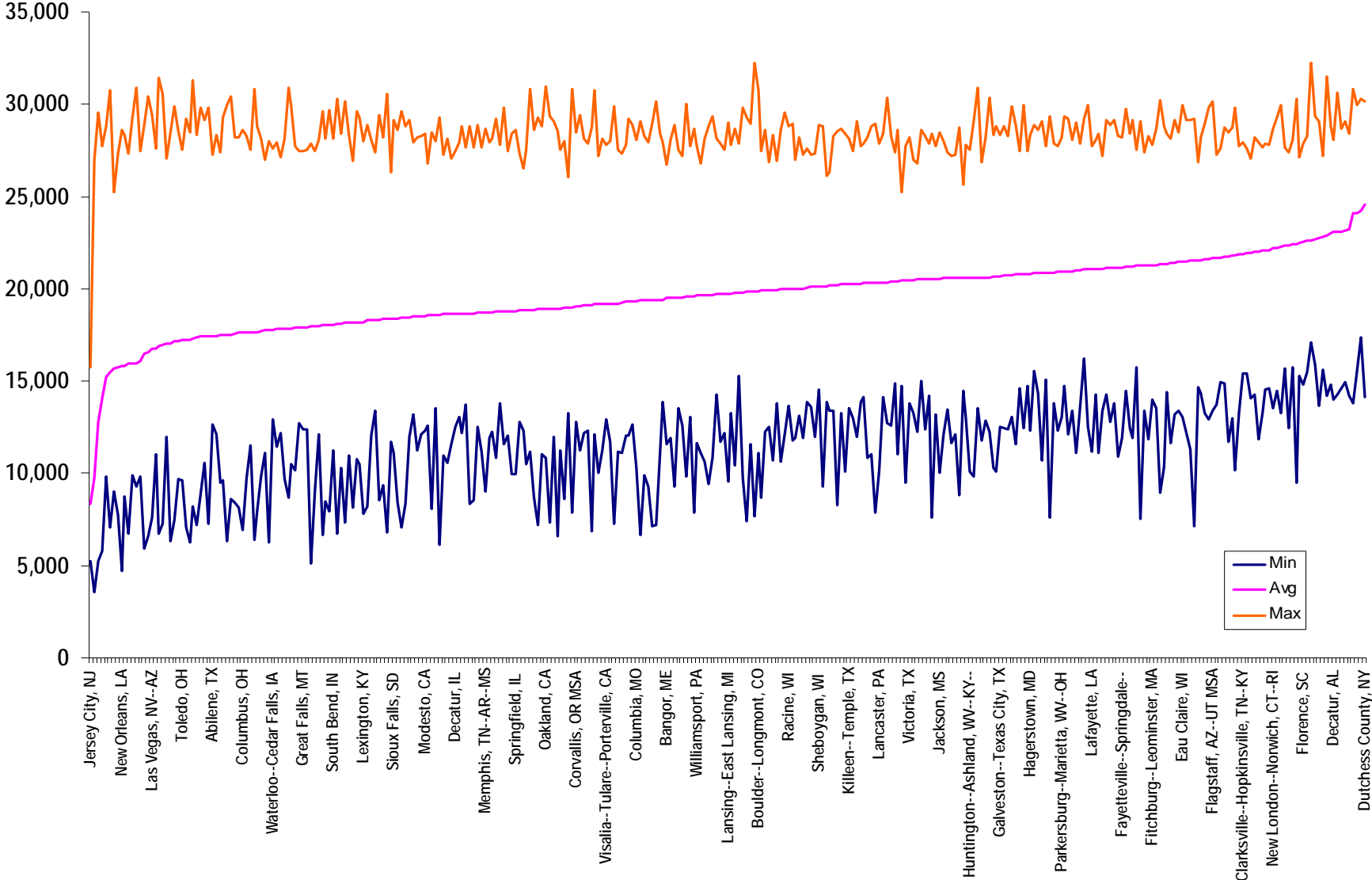


Hawaii



Puerto Rico

Transtats for DTYQ in All US Metros—All have high VMT collars—1/3 with over half the population have cores with 10k or less

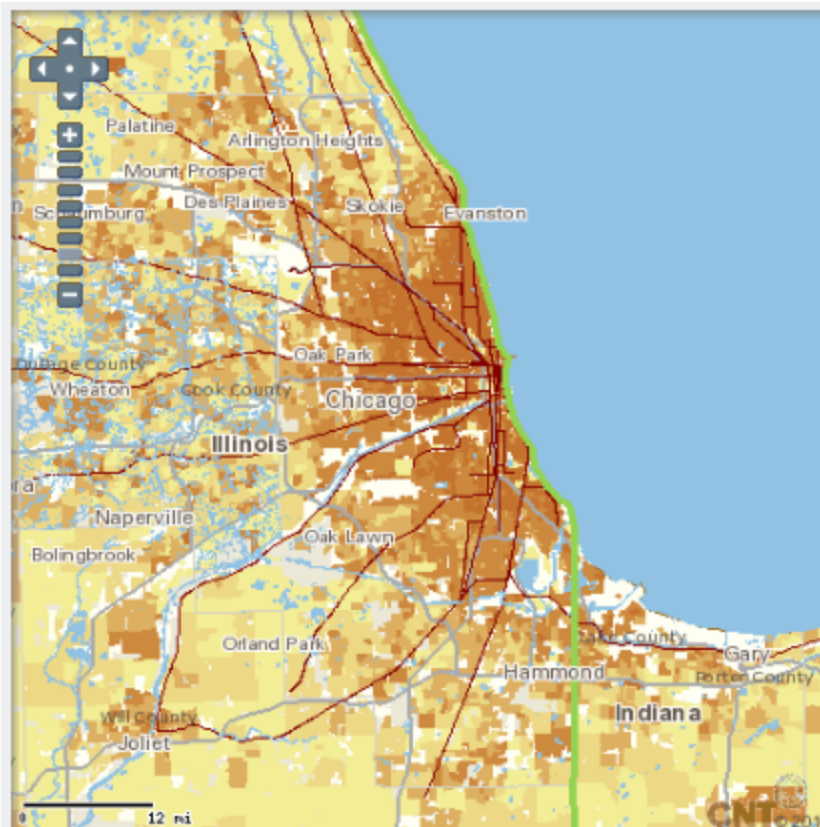


Chicago MSA Mirror Images

Net Density 0-347 HH/RA vs 6600 to 30,400 VMT/HH/Year

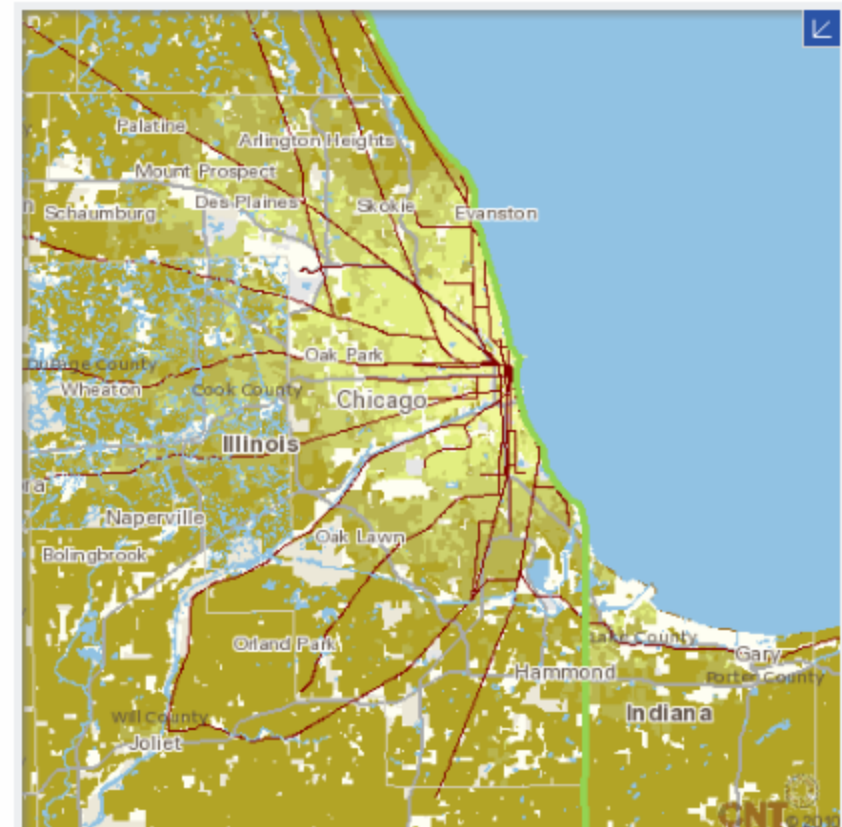
Residential Density ▼ Change

Household Density		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,970 with data)	5,583 (5,583 with data)
Minimum	0 HHs/Res. Acre	0 HHs/Res. Acre
Average	11 HHs/Res. Acre	12 HHs/Res. Acre
Maximum	347 HHs/Res. Acre	347 HHs/Res. Acre
Households	2,971,690	2,739,718



Vehicle Miles Traveled (VMT) per Household ▼ Change

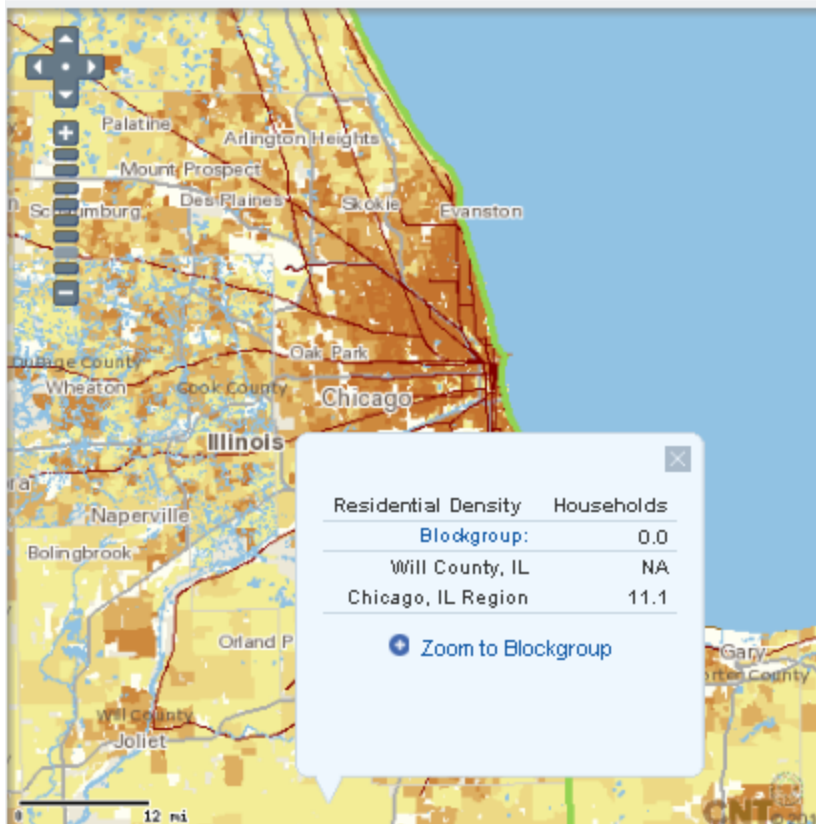
Vehicle Miles Traveled (VMT) per Household		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	5,583 (5,511 with data)
Minimum	6,600 Annual Miles	6,600 Annual Miles
Average	16,567 Annual Miles	15,886 Annual Miles
Maximum	30,399 Annual Miles	29,453 Annual Miles
Households	2,971,528	2,739,556



One Click Shows Area of Highest VMT

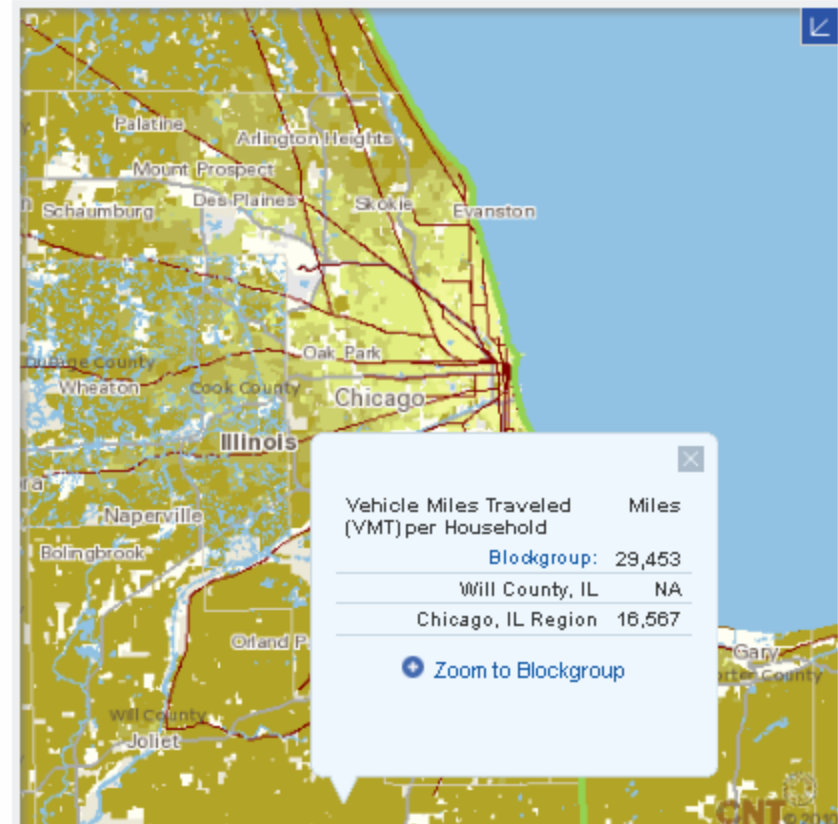
Residential Density ▼ Change

Household Density		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,970 with data)	5,583 (5,583 with data)
Minimum	0 HHs/Res. Acre	0 HHs/Res. Acre
Average	11 HHs/Res. Acre	12 HHs/Res. Acre
Maximum	347 HHs/Res. Acre	347 HHs/Res. Acre
Households	2,971,690	2,739,718



Vehicle Miles Traveled (VMT) per Household ▼ Change

Vehicle Miles Traveled (VMT) per Household		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	5,583 (5,511 with data)
Minimum	6,600 Annual Miles	6,600 Annual Miles
Average	16,567 Annual Miles	15,886 Annual Miles
Maximum	30,399 Annual Miles	29,453 Annual Miles
Households	2,971,528	2,739,556



Another Shows Urban Form or Lack Thereof

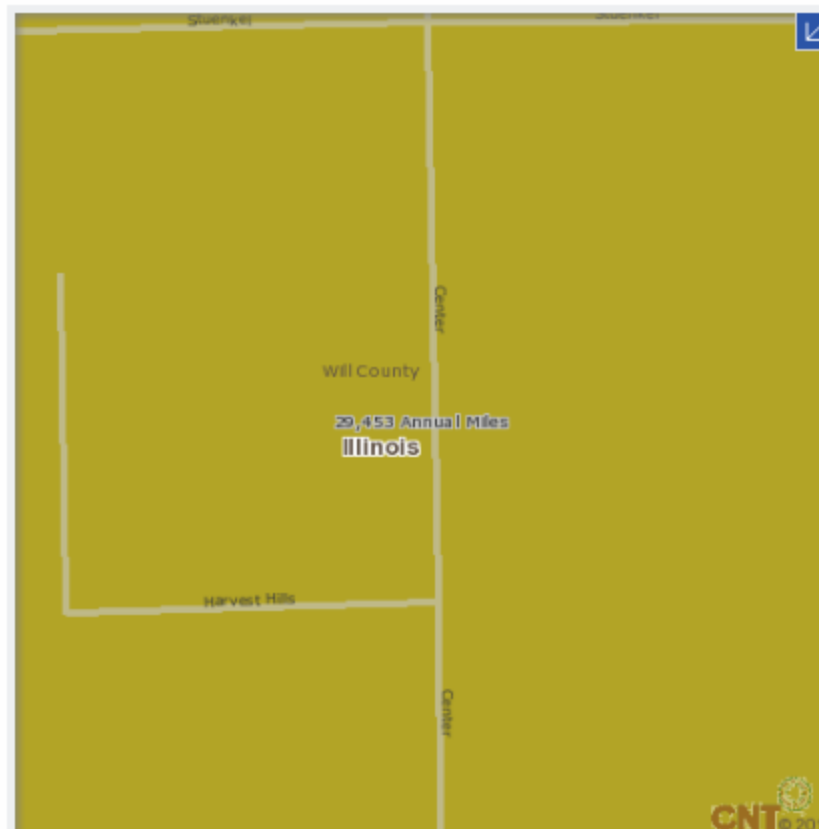
Residential Density ▼ Change

Household Density		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,970 with data)	1 (1 with data)
Minimum	0.0 HHs/Res. Acre	0.0 HHs/Res. Acre
Average	11.1 HHs/Res. Acre	0.0 HHs/Res. Acre
Maximum	347.3 HHs/Res. Acre	0.0 HHs/Res. Acre
Households	2,971,690	821



Vehicle Miles Traveled (VMT) per Household ▼ Change

Vehicle Miles Traveled (VMT) per Household		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	1 (1 with data)
Minimum	6,600 Annual Miles	29,453 Annual Miles
Average	16,567 Annual Miles	29,453 Annual Miles
Maximum	30,399 Annual Miles	29,453 Annual Miles
Households	2,971,528	821



While This One Clearly Shows Urban Form and Transit Station Areas

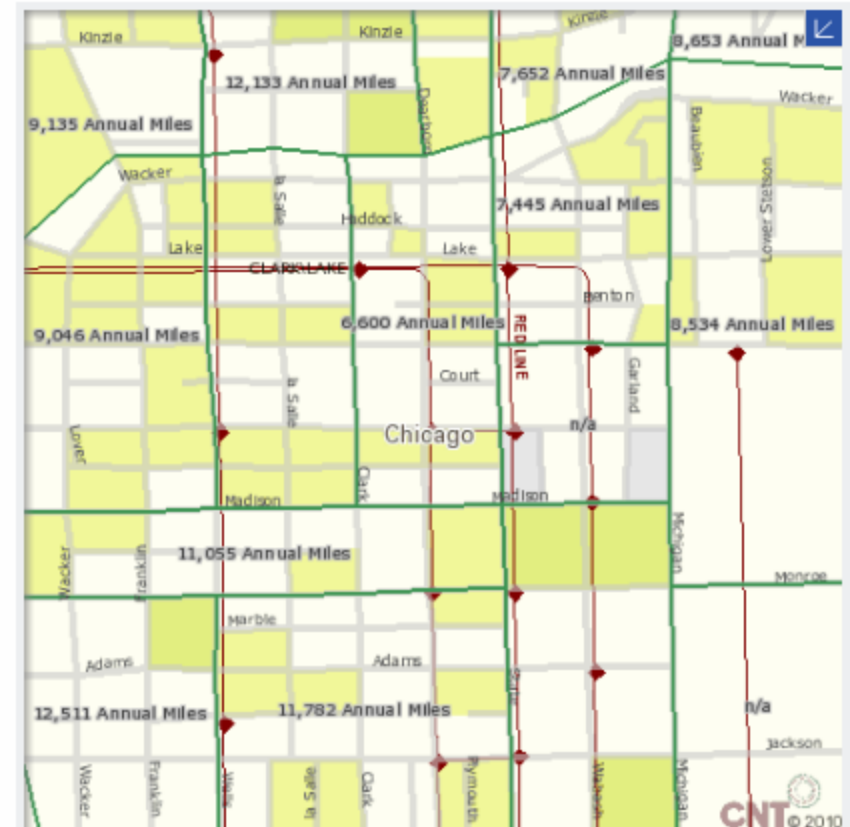
Residential Density Change

Household Density		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,970 with data)	14 (14 with data)
Minimum	0 HHs/Res. Acre	3 HHs/Res. Acre
Average	11 HHs/Res. Acre	165 HHs/Res. Acre
Maximum	347 HHs/Res. Acre	284 HHs/Res. Acre
Households	2,971,690	7,017



Vehicle Miles Traveled (VMT) per Household Change

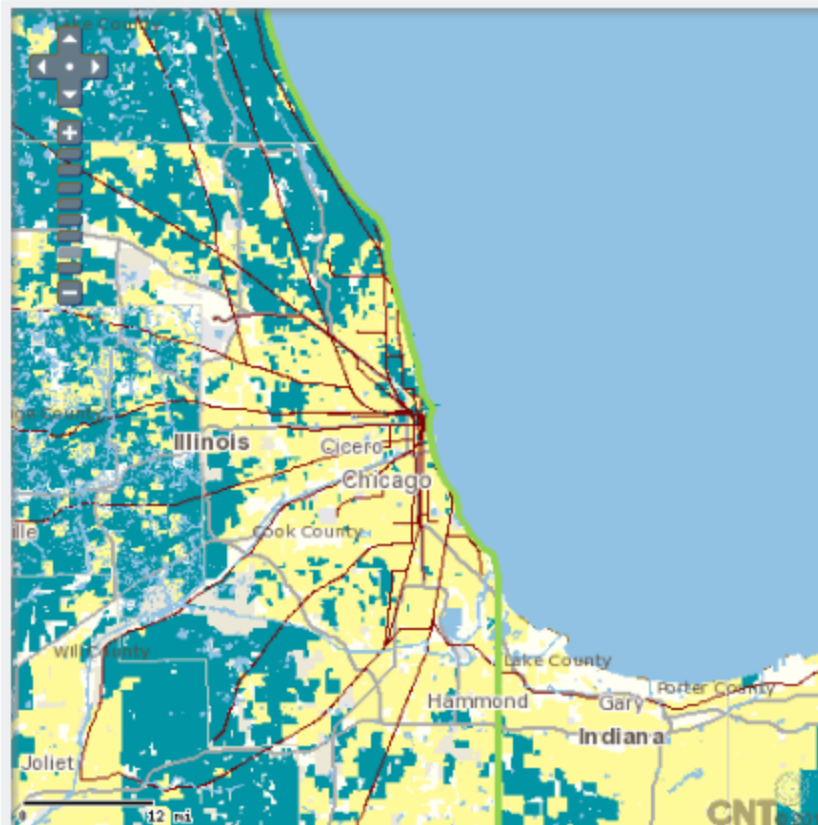
Vehicle Miles Traveled (VMT) per Household		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	14 (13 with data)
Minimum	6,600 Annual Miles	6,600 Annual Miles
Average	16,567 Annual Miles	8,509 Annual Miles
Maximum	30,399 Annual Miles	12,959 Annual Miles
Households	2,971,528	7,017



4170/5898 areas are affordable at $H \leq 30\%$ AMI
 3198/5898 areas are affordable at $H+T \leq 45\%$ AMI
 388,000 additional households financially stressed

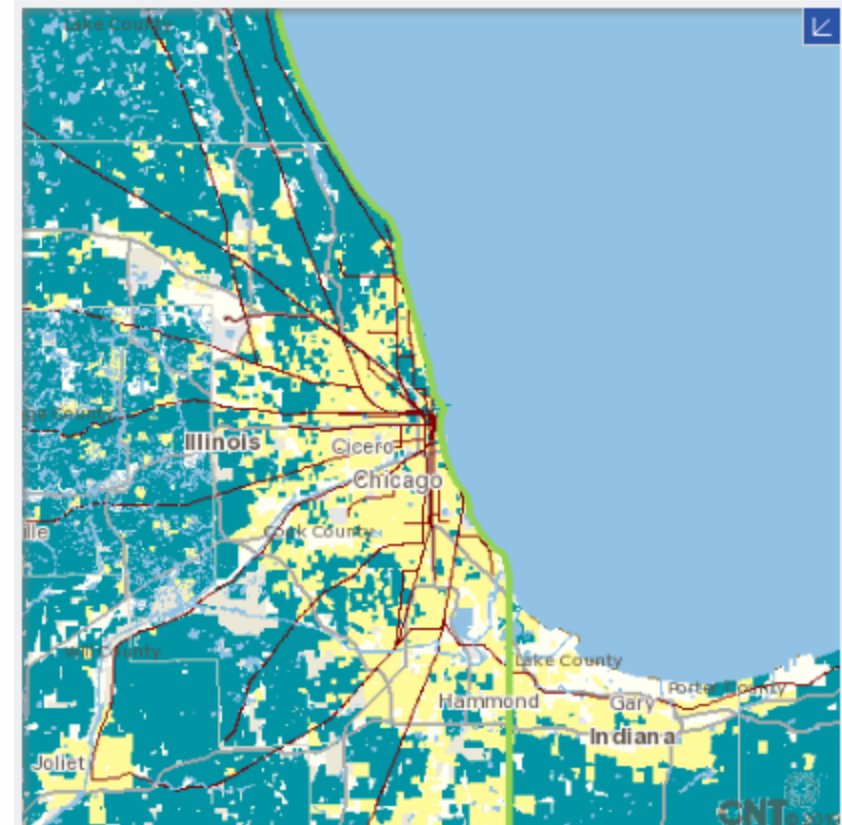
Housing Costs - % Income Change

Total Housing Costs - % Income			
Statistics	Region		Viewable Area on Map Below
Block Groups	5,970 (5,906 with data)		5,463 (5,399 with data)
Minimum	3 %		2 %
Average	28 %		28 %
Maximum	104 %		104 %
Households	2,971,638		2,645,872



Housing and Transportation Costs - % Income Change

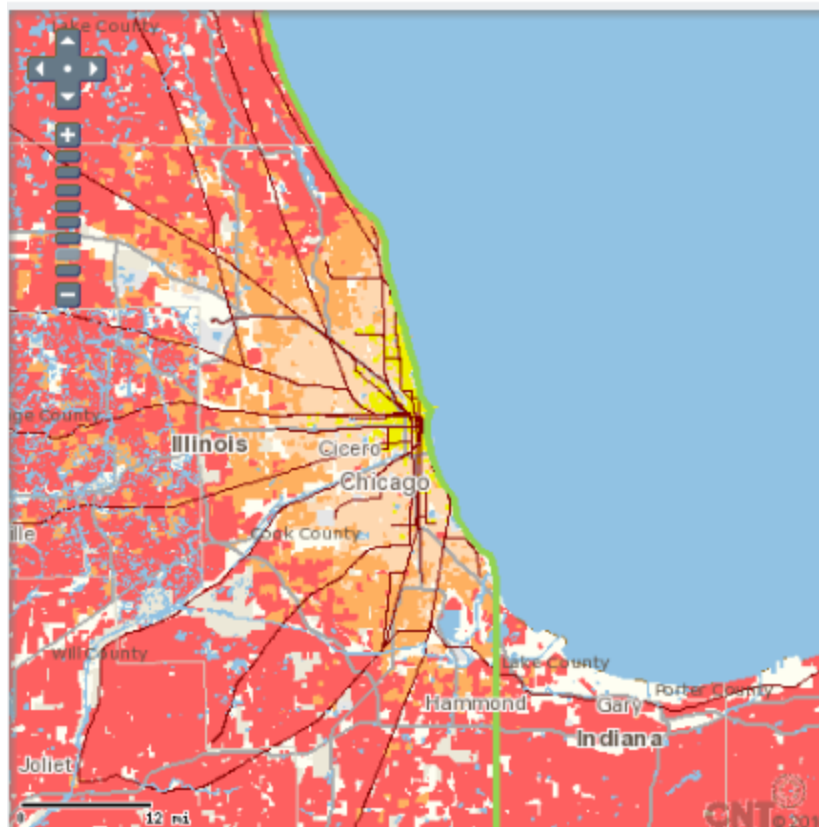
Total Housing and Transportation Costs - % Income			
Statistics	Region		Viewable Area on Map Below
Block Groups	5,970 (5,895 with data)		5,463 (5,388 with data)
Minimum	14 %		14 %
Average	48 %		46 %
Maximum	129 %		129 %
Households	2,971,500		2,645,734



In most efficient areas, cost of living increase from spike kept to 2%, in least efficient areas increased 9%

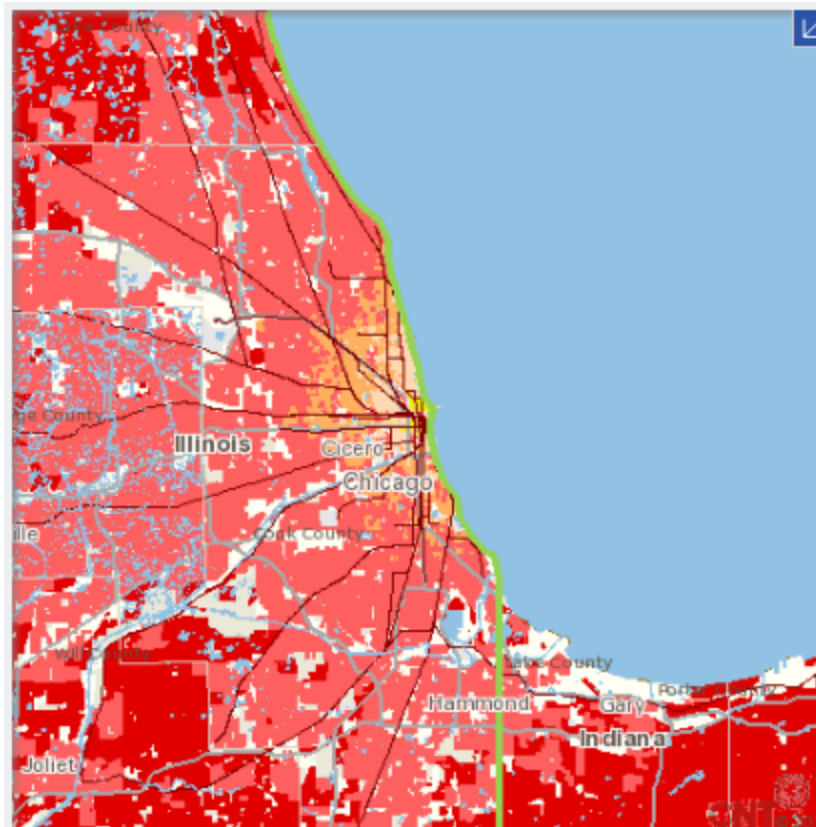
Monthly Transportation Expenses % Income - 2000 gas Change

Monthly Transportation Expenses % Income - 2000 gas Fuel Efficiency of 20.3 mpg		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	5,463 (5,391 with data)
Minimum	9.7 %	9.7 %
Average	19.1 %	18.7 %
Maximum	27.9 %	28.0 %
Households	2,971,528	2,645,762



Monthly Transportation Expenses % Income - 2008 gas Change

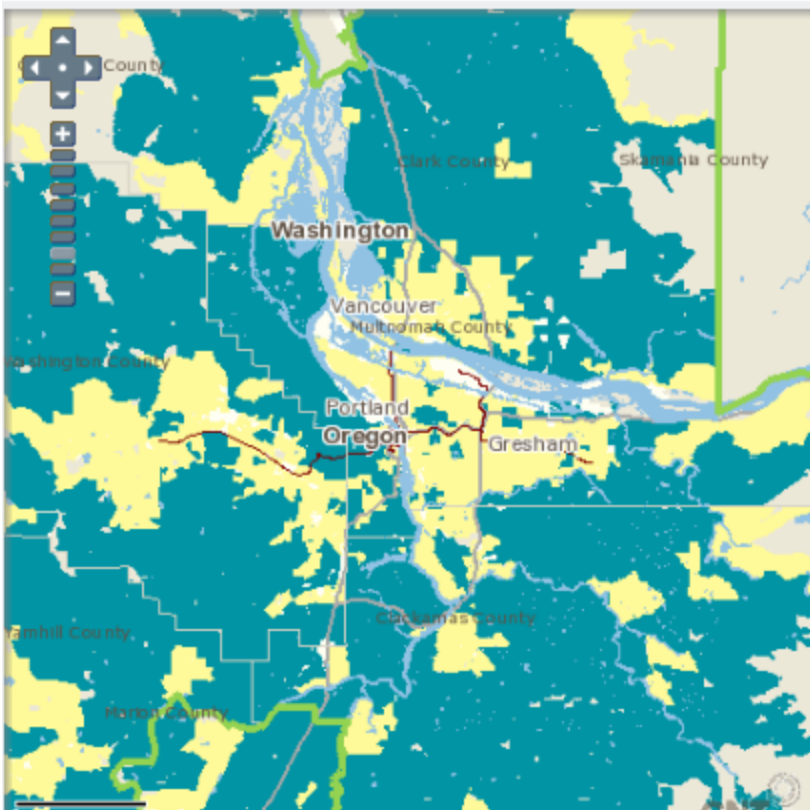
Monthly Transportation Expenses % Income - 2008 gas Fuel Efficiency of 20.3 mpg		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	5,463 (5,391 with data)
Minimum	12.6 %	12.6 %
Average	23.4 %	22.8 %
Maximum	35.8 %	35.6 %
Households	2,971,528	2,645,762



In Portland OR...Also Happens Even With...

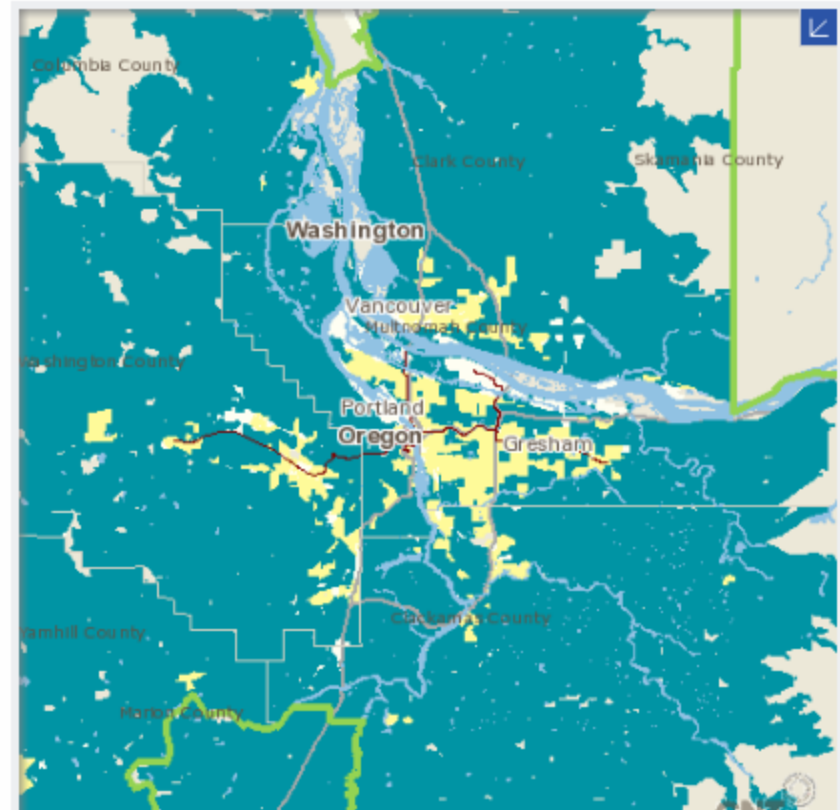
Housing Costs - % Income

Block Group Count



Housing and Transportation Costs - % Income

Block Group Count



With excellent planning

TOD - Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://184.73.196.48/toddata.cnt.org/db_tool.php?v=map&ts=Portland&r=.5&y=45.5236&x=-122.6839&z=9

Do you want Firefox to remember the password for "scott@cnt.org" on http://184.73.196.48? Remember Never for This Site Not Now

TOD Database beta Log Out CNT

Portland Region

Note: This region is not fully covered by all database.

Transit Zone: .25 mile .5 mile Smart Zoom

Selected Station Station Existing Transit Potential Transit Transit Region

Existing Transit

- Amtrak
- Portland Aerial Tram
- TriMet
- TriMet/Portland Streetcar
- Wahkiakum County

Potential Transit

- Columbia River Crossing - LRT
- Milwaukie LRT
- Portland Streetcar Loop

Report Data Geographies Full Report

Portland Transit Region:

Regional Typical Household Transportation Costs, % Income: ⁽¹⁾	21.49
Regional Typical Household Housing Costs, % Income: ⁽²⁾	28.56
Regional Typical Household Housing + Transportation Costs, % Income: ⁽³⁾	50.06
Regional Typical Household Monthly Transportation Expenses (\$) - 2000 gas: ⁽⁴⁾	843
Regional Typical Household Median Household Income: ⁽⁵⁾	49,325
Station .5 Mile Transit Zone: Amtrak Cascade; Albany	
Regional Typical Household Transportation Costs, % Income: ⁽¹⁾	
Regional Typical Household Housing Costs, % Income: ⁽²⁾	

Done

start 2 Mozilla Th... TOD - Mozilla ... H+T Affordab... Downloads Presentation1 FTA edited pr... tod_database... Removable Di... 11:30 AM

[Http://abogo.cnt.org](http://abogo.cnt.org) or abogo.cnt.org yields Neighborhood average cost and GHG/hh

Abogo beta TM transportation costs made transparent



What is Abogo?

Abogo is a tool that lets you discover how transportation impacts the affordability and sustainability of where you live.

[Sign up for Updates](#)

[Blog](#)

Sprawl in the red

Over on Huffington Post, Jeff Speck uses CNT's H+T® Affordability Index, which powers Abogo, to illustrate the #10 thing he hates about sprawl: the carbon footprint that comes from living a car-dependent life:

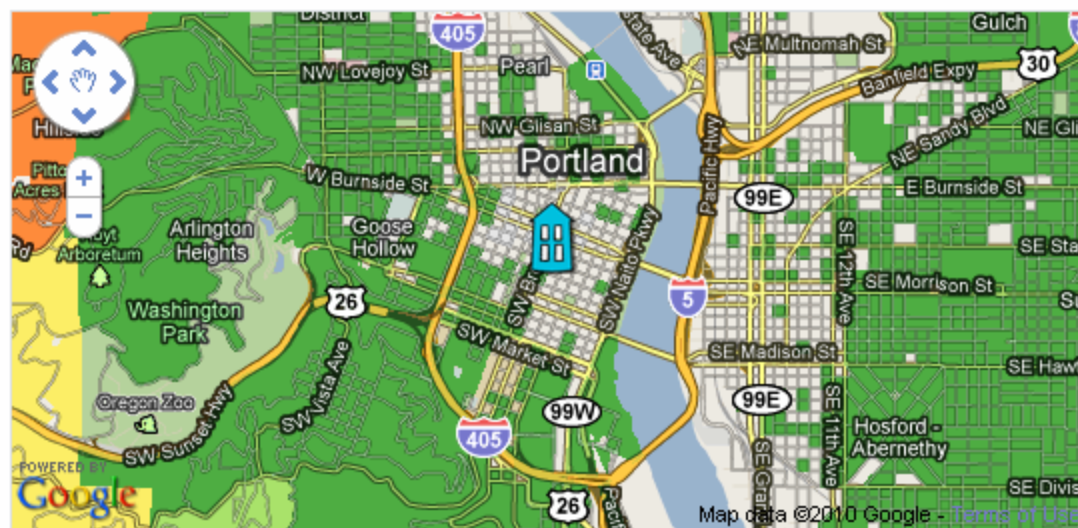
Use Abogo to see how greenhouse gas emissions from driving vary in your region.

If you think Abogo is innovative, vote here!

CNT's H+T Index ©, which powers Abogo, is up for a Chicago Innovation Award, which celebrates the creative spirit of the Chicago region by recognizing and honoring the city's most innovative new products and services. The Index is revolutionizing how planners, advocates, policy makers and consumers think

Enter an address to find out what a typical household would spend on transportation.

Current Address:



\$ per month: N/A < \$730 \$730 - \$800 \$800 - \$860 \$860 - \$930 > \$930

Transportation Cost for an average household

\$505/month

Regional average: \$842

Transportation CO₂ Impact for an average household

0.14 metric tons/month

Regional average: 0.7 metric tons

Share |



[What is Abogo?](#)

[How it Works](#)

[Lower Your Costs](#)

[FAQ](#)

[CNT Resources](#)

[Blog](#)

How to spend less:

Carpool: if you share the driving with just one other person, you'll reduce your fuel costs by half. And you can use the carpool lane!

[Click for more tips >>](#)

Abogo ^{beta}™ transportation costs made transparent



What is Abogo?

Abogo is a tool that lets you discover how transportation impacts the affordability and sustainability of where you live.

Sign up for Updates

Blog

Sprawl in the red

Over on Huffington Post, Jeff Speck uses CNT's H+T® Affordability Index, which powers Abogo, to illustrate the #10 thing he hates about sprawl: the carbon footprint that comes from living a car-dependent life:

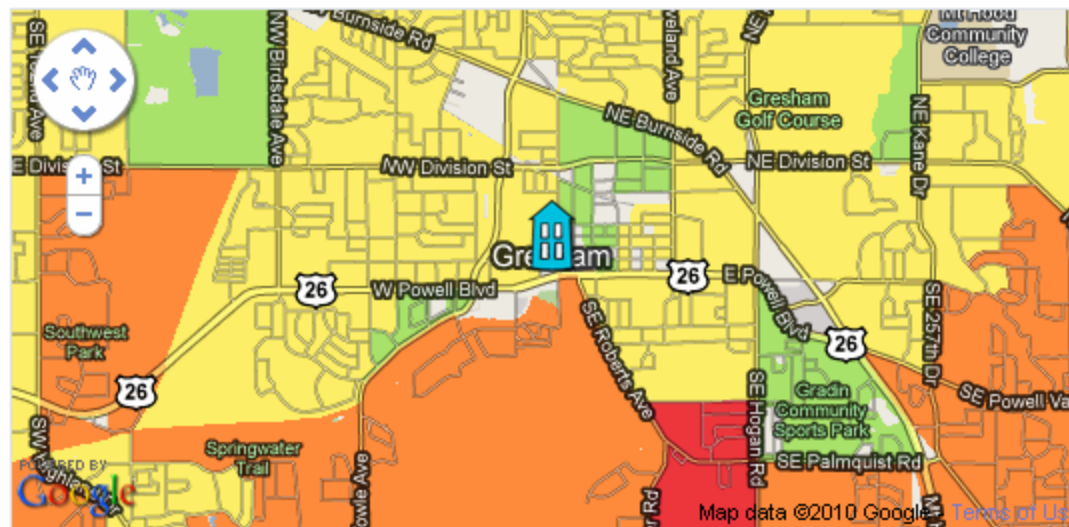
Use Abogo to see how greenhouse gas emissions from driving vary in your region.

If you think Abogo is innovative, vote here!

CNT's H+T Index®, which powers Abogo, is up for a Chicago Innovation Award, which celebrates the creative spirit of the Chicago region by recognizing and honoring the city's most innovative new products and services. The Index is revolutionizing how planners, advocates, policy makers and consumers think

Enter an address to find out what a typical household would spend on transportation.

Current Address:



\$ per month: N/A < \$730 \$730 - \$800 \$800 - \$860 \$860 - \$930 > \$930

Transportation Cost 
for an average household

\$849/month

Regional average: \$842 

Transportation CO₂ Impact 
for an average household

0.71 metric tons/month 

Regional average: 0.7 metric tons 

 Share |    



What is Abogo?

How it Works

Lower Your Costs

FAQ

CNT Resources

Blog

How to spend less:

Carpool: if you share the driving with just one other person, you'll reduce your fuel costs by half. And you can use the carpool lane!

[Click for more tips »](#)

What is Abogo?

Abogo is a tool that lets you discover how transportation impacts the affordability and sustainability of where you live.

Sign up for Updates

Blog

Sprawl in the red

Over on Huffington Post, Jeff Speck uses CNT's H+T® Affordability Index, which powers Abogo, to illustrate the #10 thing he hates about sprawl: the carbon footprint that comes from living a car-dependent life:

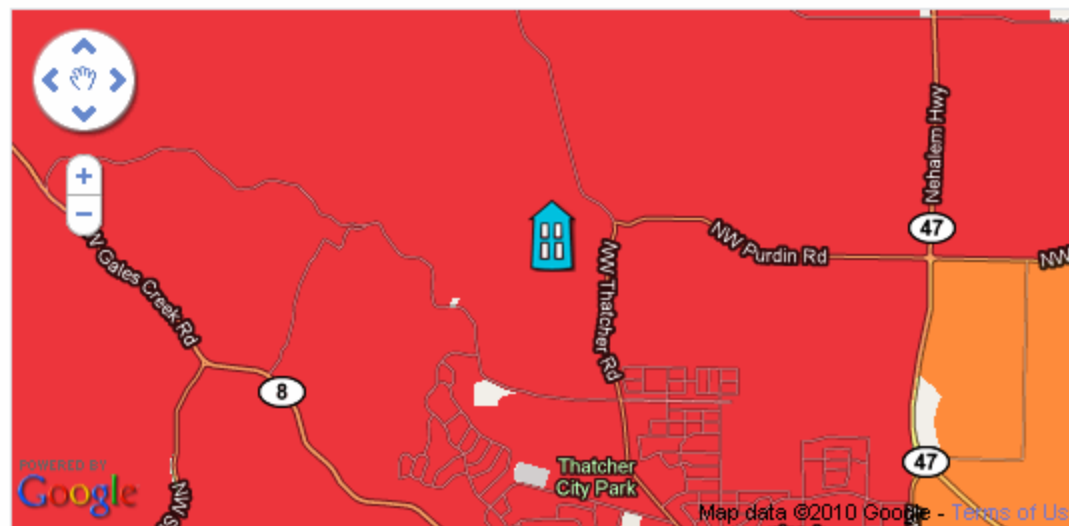
Use Abogo to see how greenhouse gas emissions from driving vary in your region.

If you think Abogo is innovative, vote here!

CNT's H+T Index ©, which powers Abogo, is up for a Chicago Innovation Award, which celebrates the creative spirit of the Chicago region by recognizing and honoring the city's most innovative new products and services. The Index is revolutionizing how planners, advocates, policy makers and consumers think

Enter an address to find out what a typical household would spend on transportation.

Current Address:



\$ per month: N/A < \$730 \$730 - \$800 \$800 - \$860 \$860 - \$930 > \$930

Transportation Cost ?
for an average household

\$1101/month

Regional average: \$842 ?

Transportation CO₂ Impact ?
for an average household

1.18 metric tons/month ?

Regional average: 0.7 metric tons ?

Share |



[What is Abogo?](#)

[How it Works](#)

[Lower Your Costs](#)

[FAQ](#)

[CNT Resources](#)

[Blog](#)

How to spend less:

Carpool: if you share the driving with just one other person, you'll reduce your fuel costs by half. And you can use the carpool lane!

[Click for more tips »](#)

Rethinking the Drive 'til You Qualify Housing Market – Diet for a Leaner Region



Gas = \$4.00/gallon, Median Income = \$62,000

- 3 Cars, 35,000 VMT, No Transit, \$15k/year housing = 64% for H+T (30-50 miles out)
- 2 Cars, 25,000 VMT, No Transit, \$18,000/year housing = 56% for H+T (15-30 miles out)
- 1 Car, 15,000 VMT, \$150/Month Transit, \$25/month for taxis, \$20k/year housing = 50% for H+T (10 – 15 miles out)
- 1 Car, 7500 VMT, \$125/Month Transit, \$50/month for Car-Sharing, \$21k/year housing = 49% H+T (7 -12 miles out)
- 0 Car, \$200/Month for Transit, \$200/Month for Car-Sharing, \$22k/year housing = 43% for H+T (0 – 7 miles out)

Chicago MSA— A Metropolitan Area of 3.3 Million Households

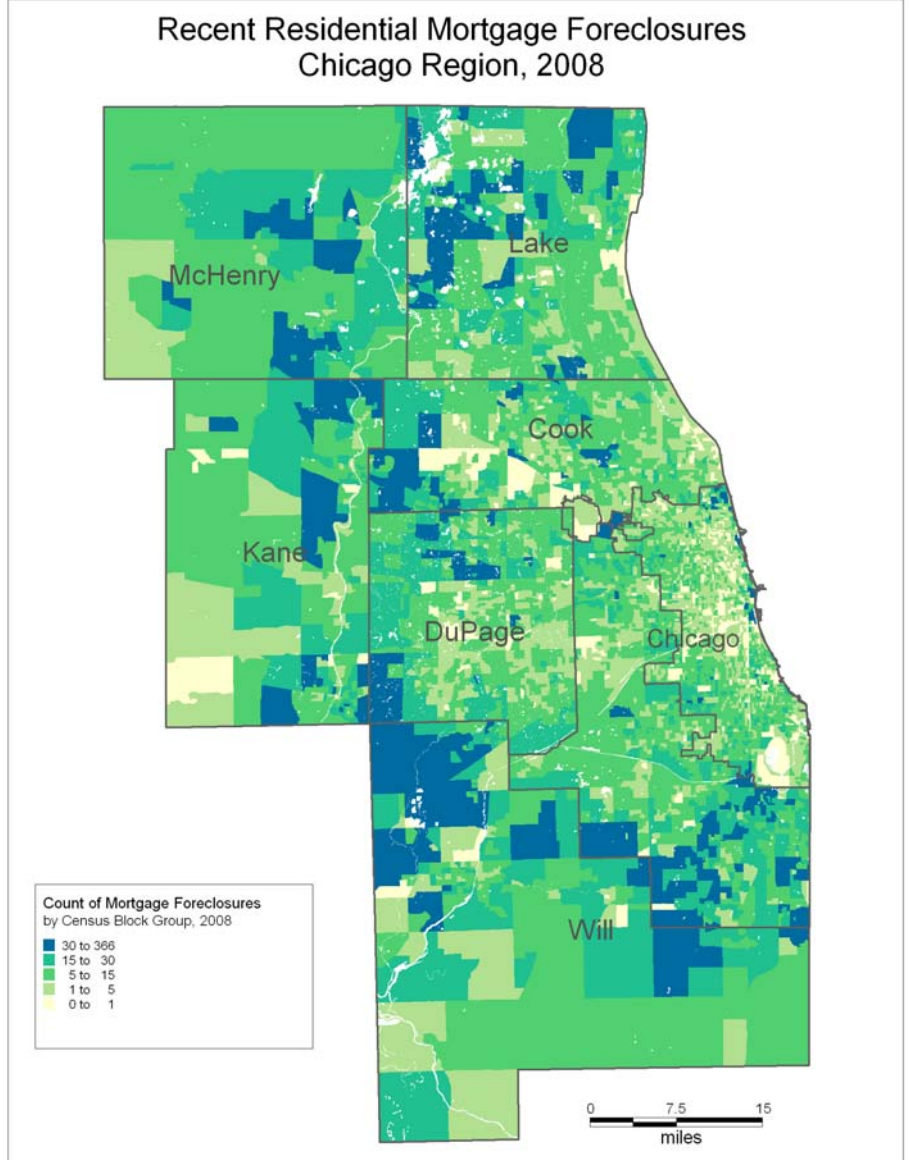
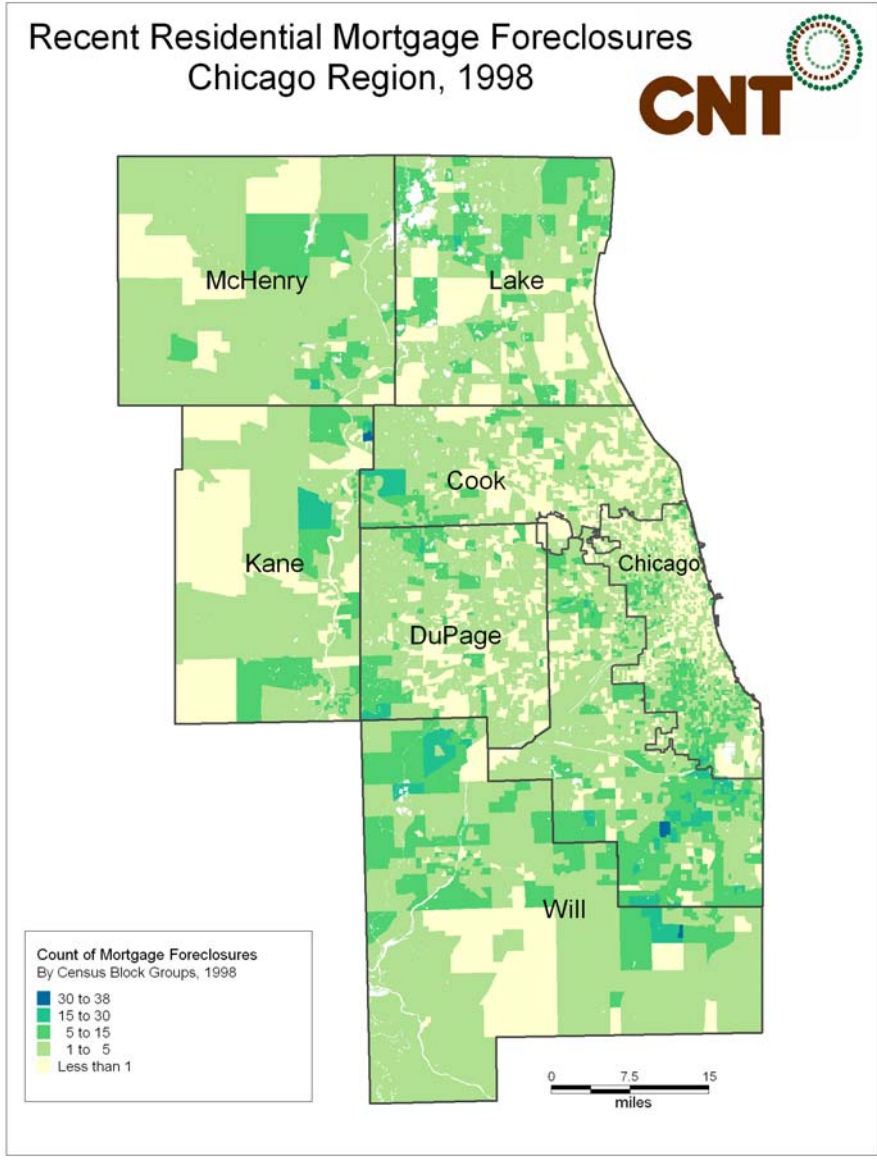
- \$1200 per HH per Month
- \$36 Billion per Year Region-Wide- Passengers
- \$30 Billion for Business and Freight
- \$6.6 Billion per Year Total Provided by
Government (12% Fed, 88% State & Local)
- \$2.2 Trillion over 30 years

We Can Use This Knowledge To—



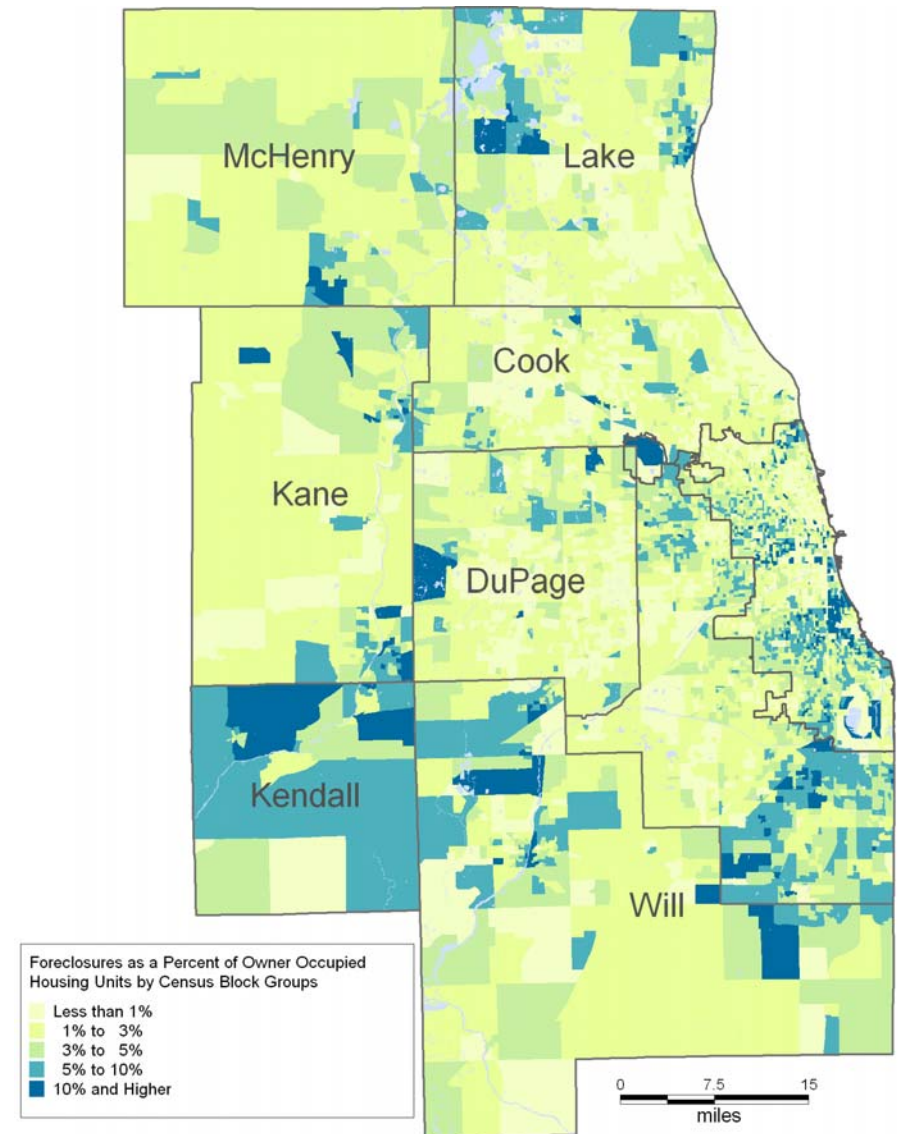
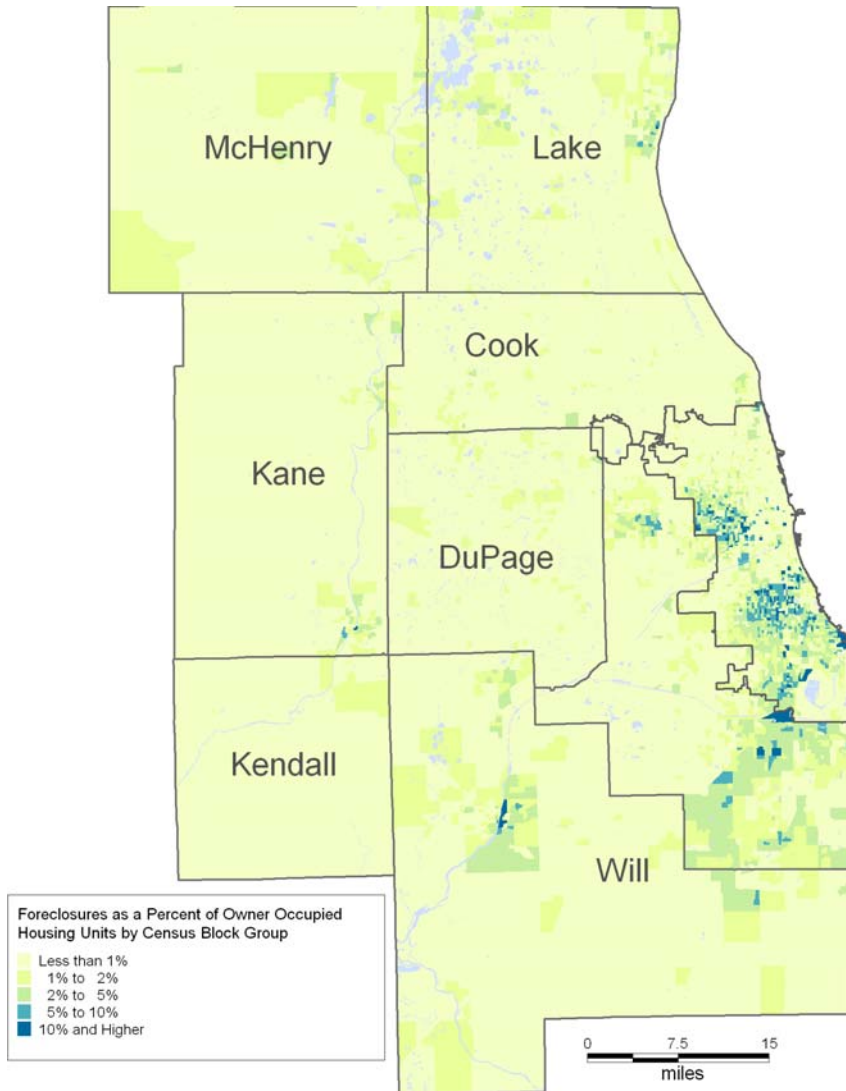
- Protect consumers against “hidden” costs by providing better information
- Analyze trends & compare across HH types
- Define housing needs for public policy purposes
- Encourage coordination of housing and transportation policies
- Inform sub-Federal planning efforts
- Predict the ability of a household to pay rent or mortgage
- Improve financial / housing counseling

Ten Years of Foreclosures in Metro Chicago



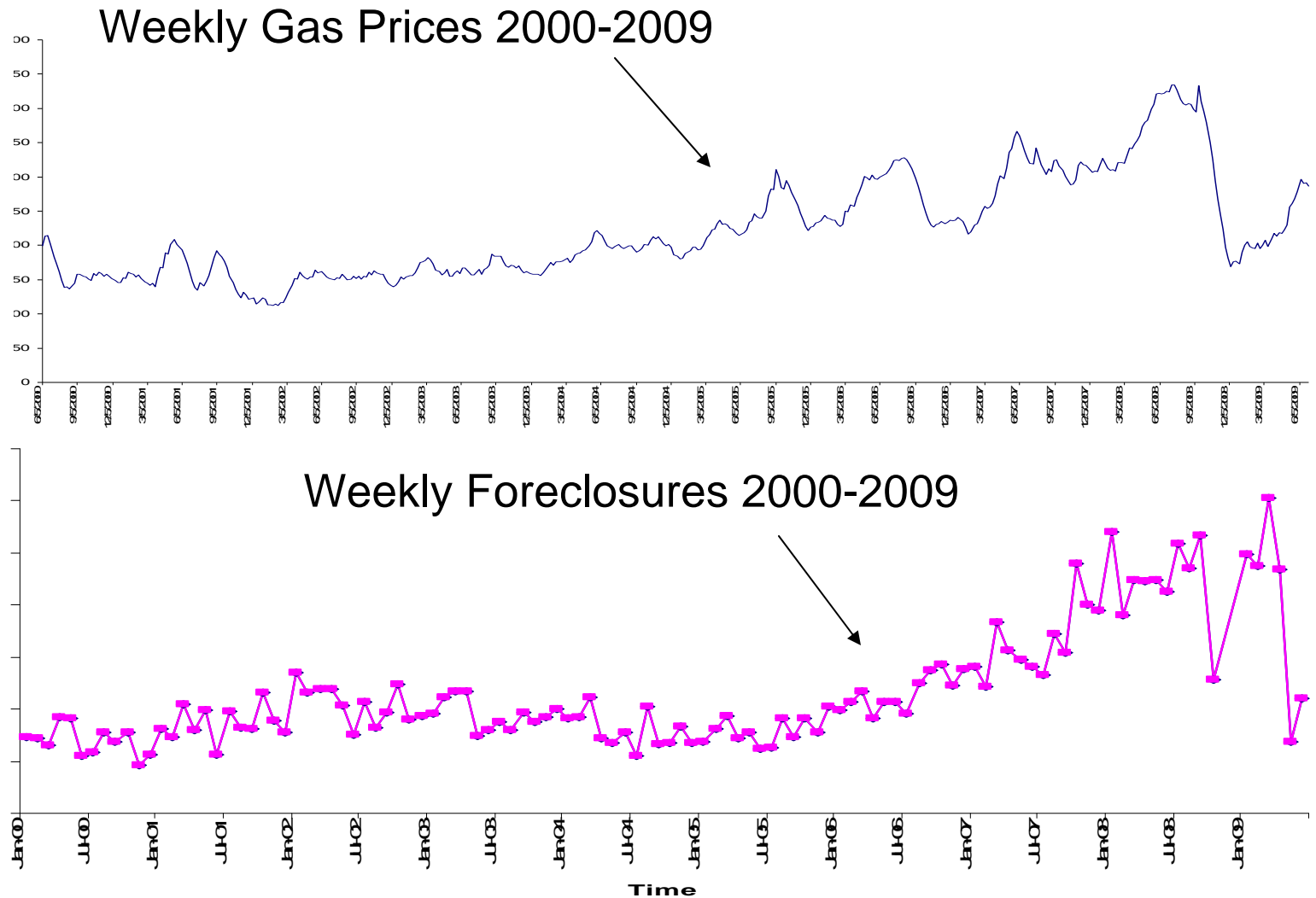
Foreclosure Rates in Chicago 2000 and 2008

Highest in Areas of High T-Cost and Extensive Use of Variable Rate Financing

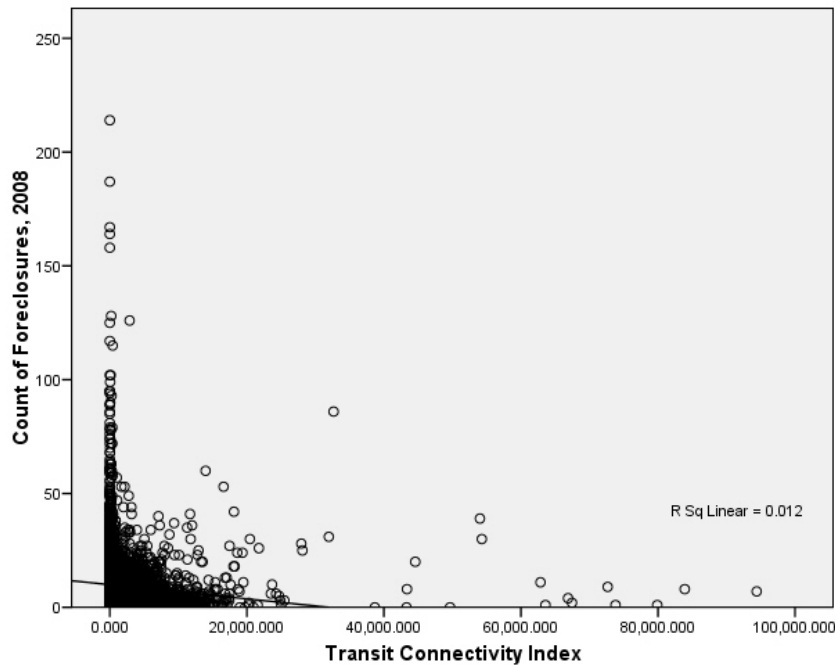


Can Gas Price Spikes Help Provide Early Warning of Defaults and Foreclosures?

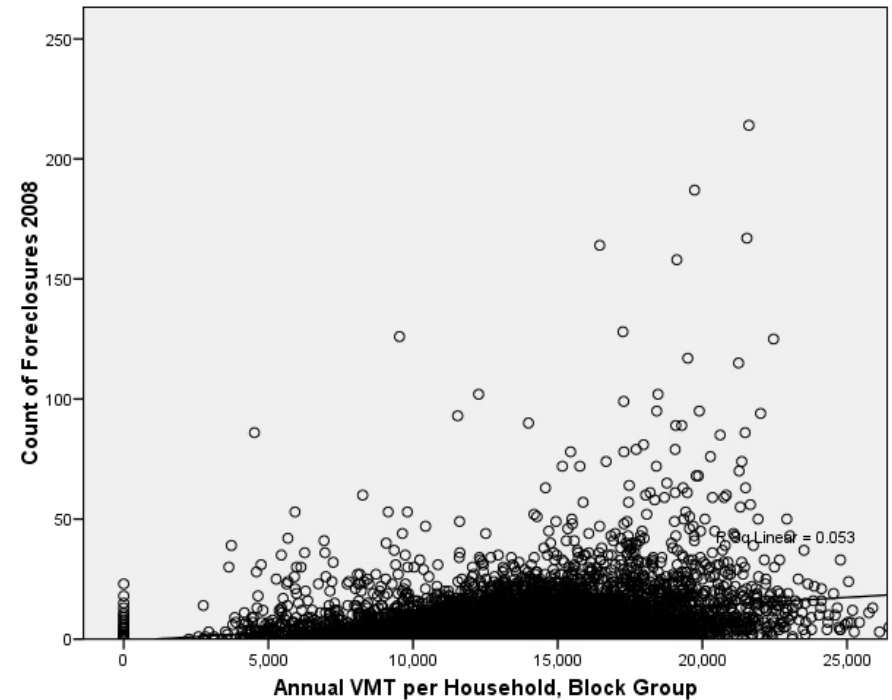
-Foreclosures followed price spikes with 6-9 month lag... & grew 4.2 times faster in suburbs than in city by 2009



The lower the TCI, the greater the number of foreclosed properties by Census Block Group




Foreclosures increase once the average annual VMT per Block Group exceeds 15,000




Location Efficient Mortgages: Idea Was Well Received, Outperformed Market— No Foreclosures

NOW IT'S EASIER
TO OWN YOUR
OWN HOME!



Introducing the
**Location Efficient
Mortgage® (LEM)**



Chicago Tribune

18 Section 1

Sunday, June 4, 2000

Skip the car, buy a house

There's a lot of hand-wringing nowadays about suburban sprawl and the need for "smart growth."

But like the weather, nobody's doing much about it.

Much of the home-buying public still opts for wide-open spaces along the metropolitan fringe. And despite thoughtful warnings from civic and regional groups, political realities in Illinois militate against significant governmental action.

Now comes a modest but innovative pilot program that just might make a small difference. Maybe even a big difference—if it educates the public about the true cost of living "out there."

It's called the Location Efficient Mortgage, or LEM, and it has been developed by environmental groups such as Chicago's Center for Neighborhood Technology along with Fannie Mae, the government-chartered, stockholder-owned repurchaser of home mortgages.

It works like this: Participating lenders, in evaluating applicants, take into consideration how close the dwelling is located to public transportation. If it's so close the applicant can live without a car, or a working couple can get by with just one, the estimate of dispos-

able income is increased, and with it, the size of the mortgage for which they qualify.

A couple jointly earning \$60,000 and buying into Chicago's transit-rich Edgewater neighborhood, for instance, would qualify for a home selling for \$212,218. Out in the boonies, under traditional guidelines, the limit would be \$158,364.

And there are sweeteners. LEMs are not subject to income limits and they offer more flexibility, including lower down payments, than conventional mortgages. The City of Chicago, moreover, is offering vouchers worth \$900 toward the purchase of energy-efficient appliances to the first 100 LEM borrowers.

Downsides? There's mandatory counseling. And for now it's limited to Chicago and three West Coast cities.

The ultimate value of LEM, however, may be to show, in ways people readily understand, that sprawl does impose costs. Some of that cost is paid, knowingly and gladly, by those who choose to live "out there." Much of it, however, is hidden, and paid indirectly by those who live "back here."

For more information about LEMs call 1-800-732-6643.

Improve your commute — buy a house.



Your dream of home ownership can become reality.

Announcing the arrival of the Location Efficient Mortgage in your neighborhood. If you live and work in Seattle, you may qualify for a lower down payment, a discounted annual Metro Transit pass and a free membership to the Passcar program. You'll look at commuting in a whole new light.

Make a move into your future.

Call (800) 719-8080 today.
www.homestreetbank.com

Thinking About Both Ownership and Rental Housing

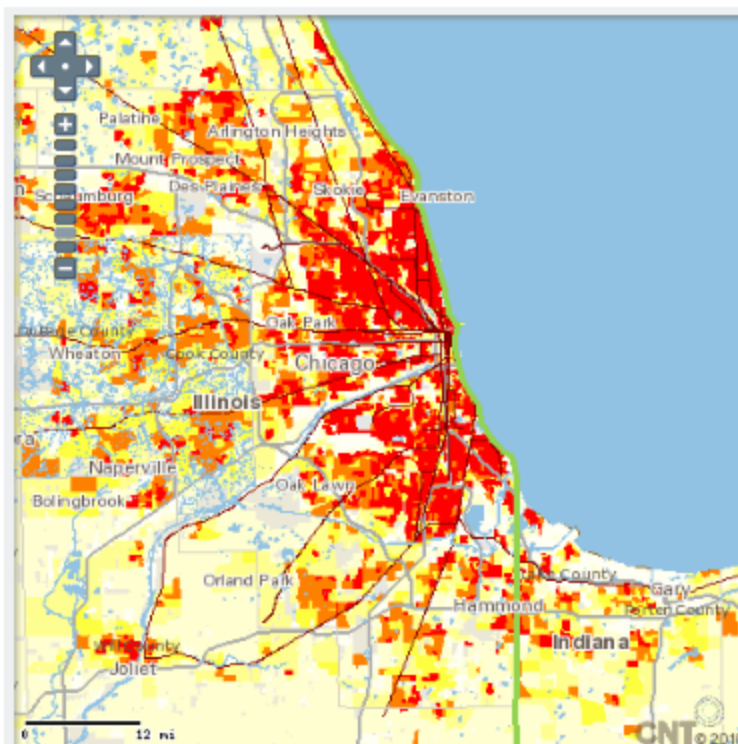
- From 2005-2009
- Owner households increased vehicle ownership from 1.89 to 2.02
- Renter households stayed almost even, increasing from 1.20 to 1.22
- Homeownership rate actually dropped
- We need a smarter ownership strategy AND a balance between renting and owning

Similar Observations About Climate Protection—Impossible to Hit “Net Zero” in an Inconvenient Location—Perhaps an Inconvenient Truth

C02 per Acre From Household Auto Use [Change](#)

- Data Not Available
- Less than 6 Metric Tons/Acre
- 6 to 14 Metric Tons/Acre
- 14 to 20 Metric Tons/Acre
- 20 to 30 Metric Tons/Acre
- 30 Metric Tons/Acre and Greater

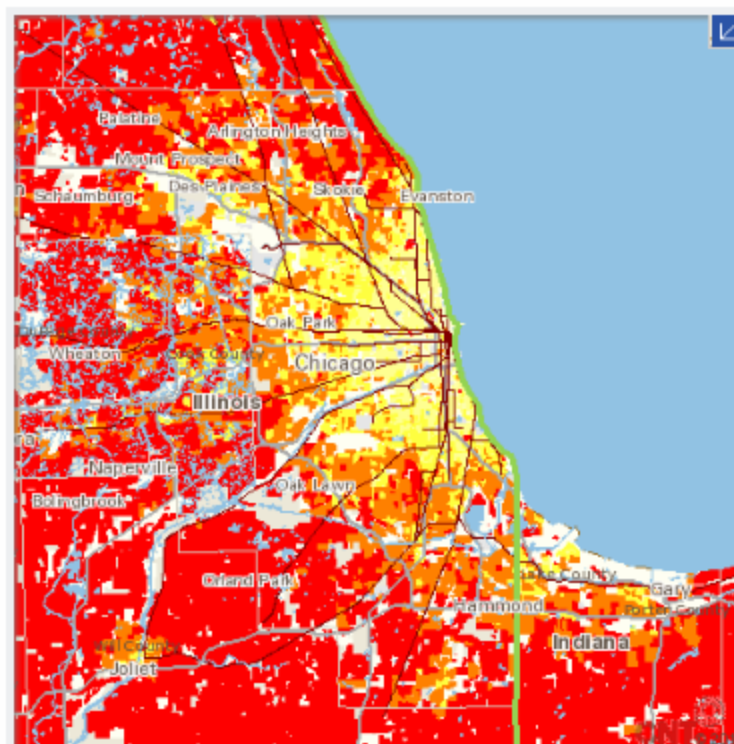
Total Carbon Dioxide (CO₂) Emissions are calculated for the Block Group and then divided by the total area of the Block Group, which shows that areas with higher Residential Density tend to produce more carbon dioxide per acre.

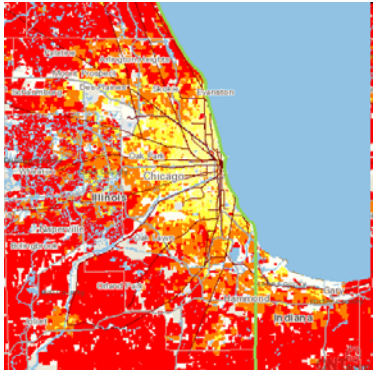


C02 per Household From Household Auto Use [Change](#)

- Data Not Available
- Less than 3.3 Metric Tons/HH
- 3.3 to 5.1 Metric Tons/HH
- 5.1 to 6.5 Metric Tons/HH
- 6.5 to 8.6 Metric Tons/HH
- 8.6 Metric Tons/HH and Greater

Total Carbon Dioxide (CO₂) Emissions are calculated for the Block Group and then divided by the total number of households in the Block Group, which shows that areas with higher Residential Density have lower average emissions per household. Comparing this figure with CO₂ per Acre From Household Auto Use illustrates that location efficiency reduces per household emissions.





9.7-
14.6

Transport Carbon in Tons of CO₂/HH/Year



**This Place
Has the
Disappearing
Carbon
Blues...♪**



5.8-
10.7



3.9-
6.1



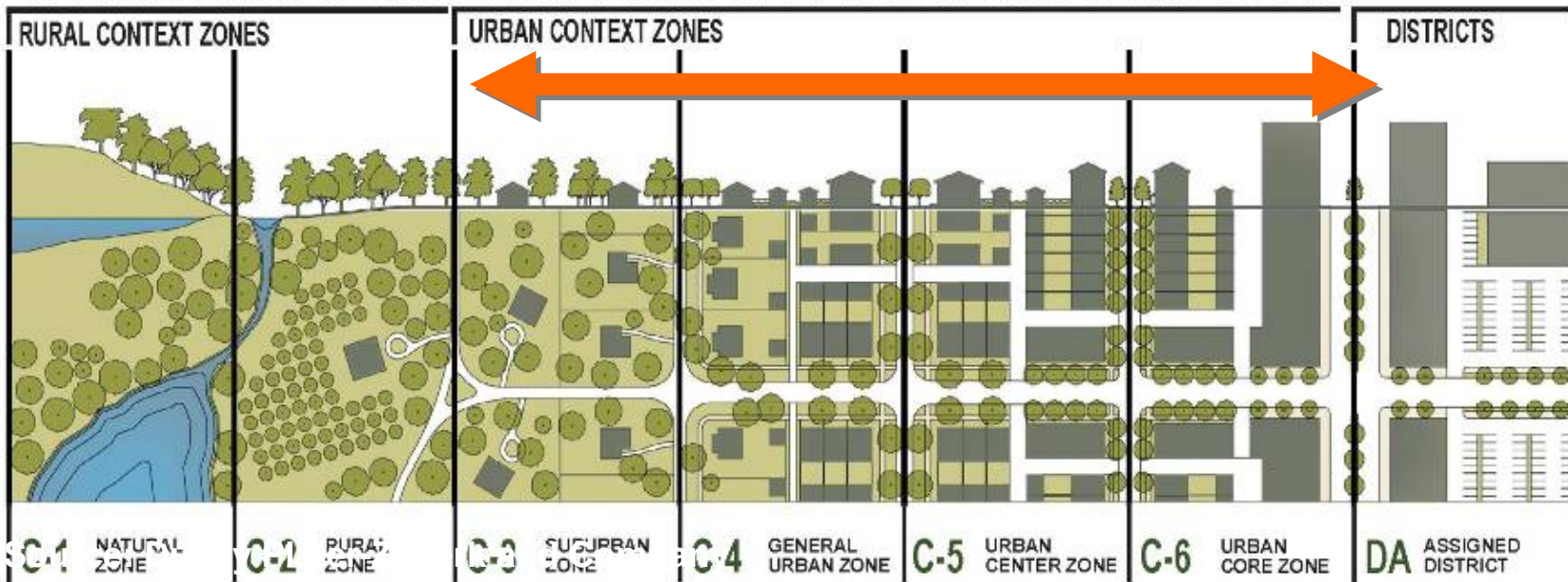
2.4-
4.4



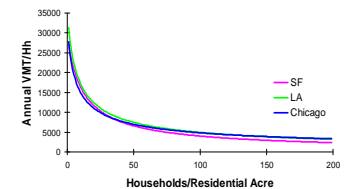
0-
2.43



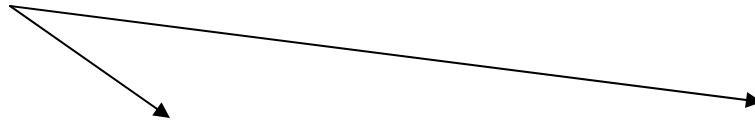
RURAL | TRANSECT | URBAN



Location Efficiency & the
Transect Reveals
Carbon Benefits of Good
Urban Form



Similar Choices Comprise a Vision:



- Bottling Rainstorms and “Treating” Them
- Streets to Maximize Traffic & Speed
- Bypass Communities with Long-Distance Highways & Aviation
- Expand Electric Utility Capacity
- Expand Car Ownership
- Invest to Promote Consumption

Catching Raindrops Where They Fall

Streets to Connect People and What They Do Routinely

Reconnect Communities with Inter-City Rail

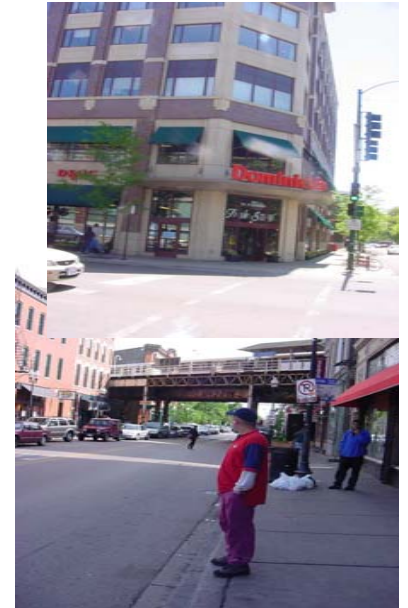
Increase Buildings & Community Efficiency

Communities that Come with Local Amenities and Shared Vehicles

Invest to Increase Productivity and Reduce Cost of Living

TOD Is:

- **Location efficiency** —Dense, transit-accessible, & pedestrian-friendly
- **Rich Mix of Choices** —Wide range of mobility, housing and shopping options
- **Value Capture** —Good service & connections, local amenities support place-making, scorekeeping & attention to financial returns
- **Place-Making** —places for people, enriches existing qualities, provides new connections, works with landscape, builds reputation
- **Resolution of Tension between TODs as “Nodes” and “Places”**— Works to support travel networks and communities



New Transit Town,
Island Press 2005

TOD is not

- ***Just for commuters*** —Work-related trips just 18 percent of total travel
- ***Auto-oriented transit*** —Way too much land in Chicago devoted to park-and-ride lots
- ***Just a place to sleep at night*** —People need to shop, eat, visit without getting in a car
- ***Only the transit property*** —All successful TODs are joint developments between cities, transit operators, private investor/owners, and communities

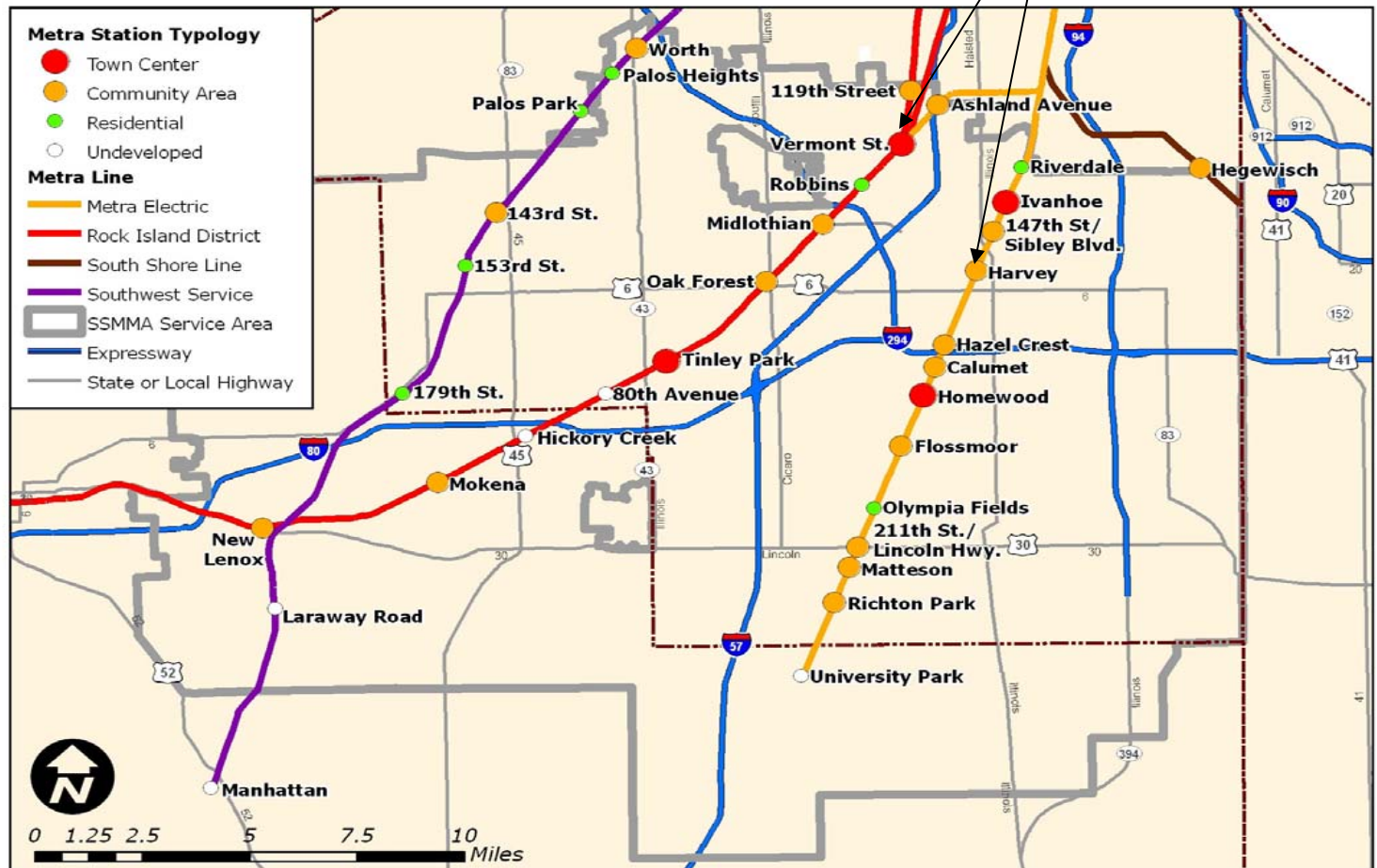


New Transit Town,
Island Press 2005

Developing Strategic TOD Plans for Deploying Underutilized Assets—Strategic Plans in Chicago, Columbus, Cinci, Cleveland

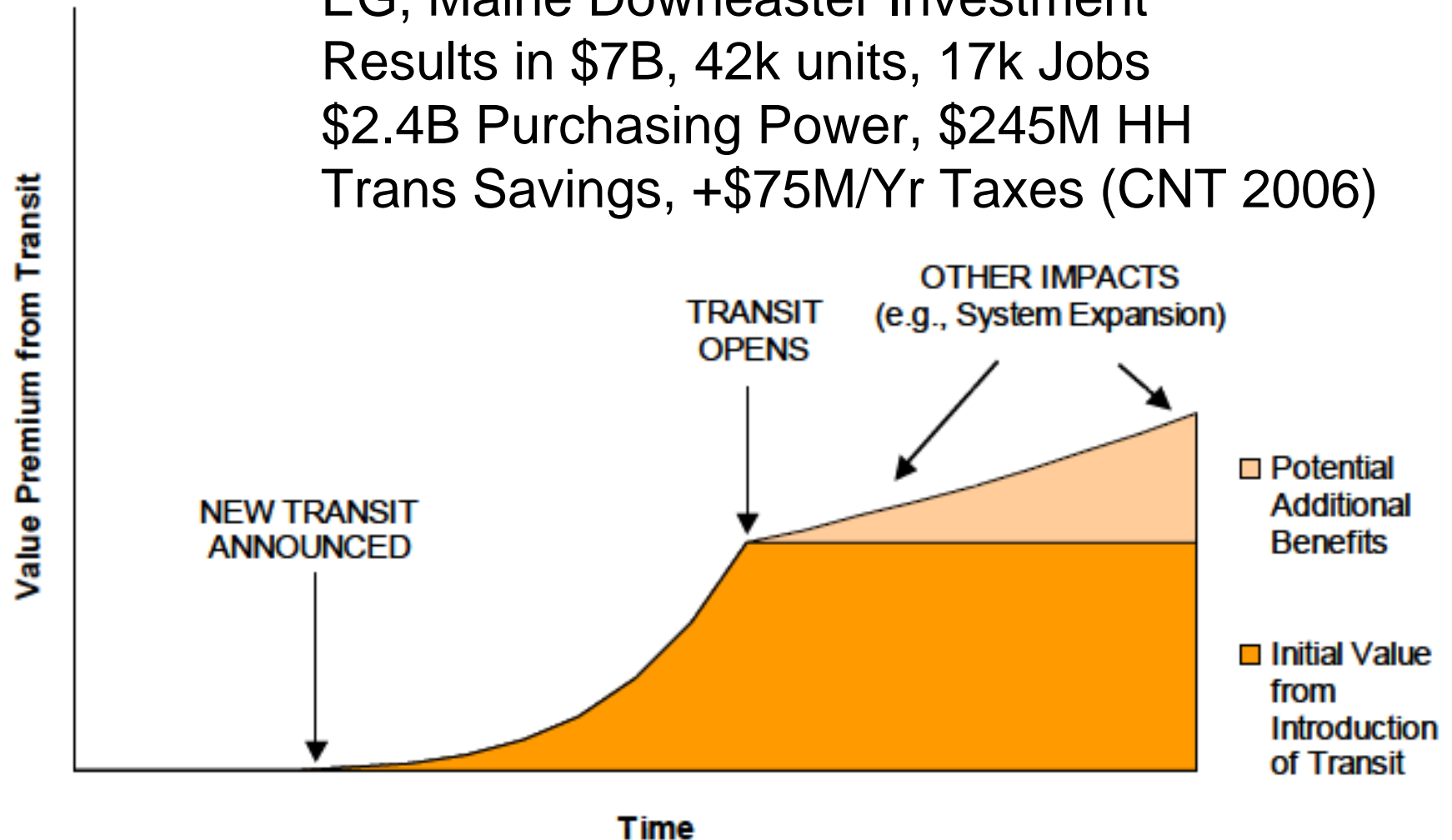
- 62% of nation's 3400 freight yards in metro areas

TOD Typology for Chicago's South Suburbs Blue Island & Harvey COD



How Value Creation and Capture Work— Results in Measured Increase of 18-167% Within Walking Distance of Stations

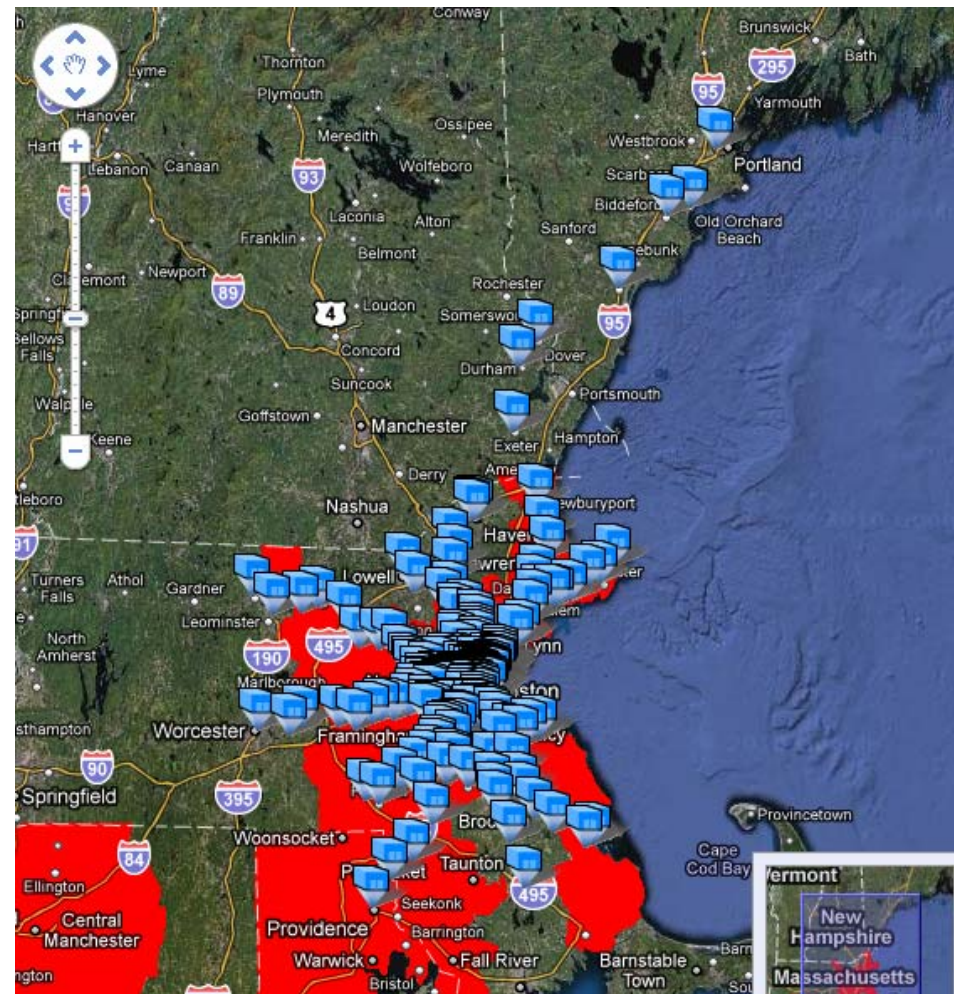
EG, Maine Downeaster Investment
Results in \$7B, 42k units, 17k Jobs
\$2.4B Purchasing Power, \$245M HH
Trans Savings, +\$75M/Yr Taxes (CNT 2006)

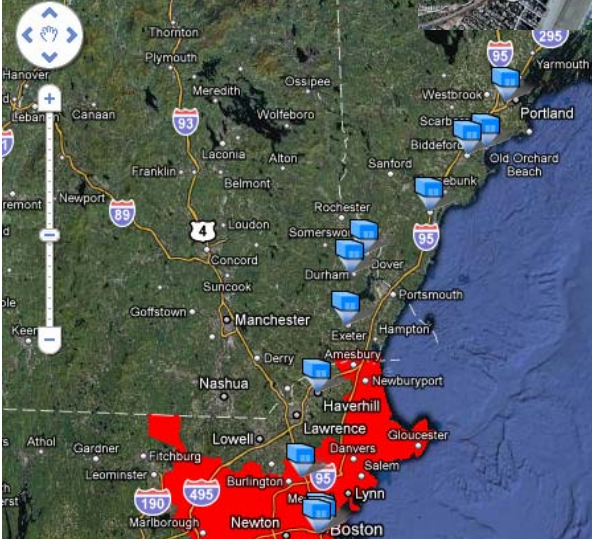


Source: Strategic Economics.

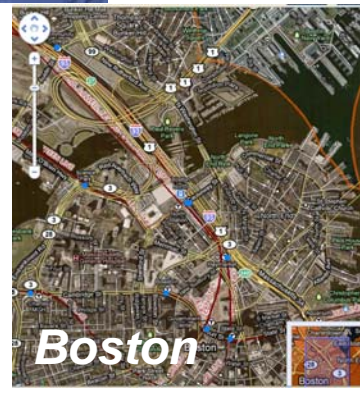
Boston – Portland CBSA

- **288 Stations in 2000**
- **10 in Downeaster Corridor**
- **Expansion to Freeport, Brunswick**
- **396,000 HHs in 2000, 16% of total**
- **Will grow to 752,000 or 24% in 2030**
- **Growth of 356,000 almost ½ of Projected Regional Growth**
- **Only NY, LA, Bay Area & Chicago Will See More TOD HHs**
- **Corridor to NE is a chain of rural cities**
- **Extension two stops to Freeport & Brunswick will link to Maine Eastern RR to Rockland**





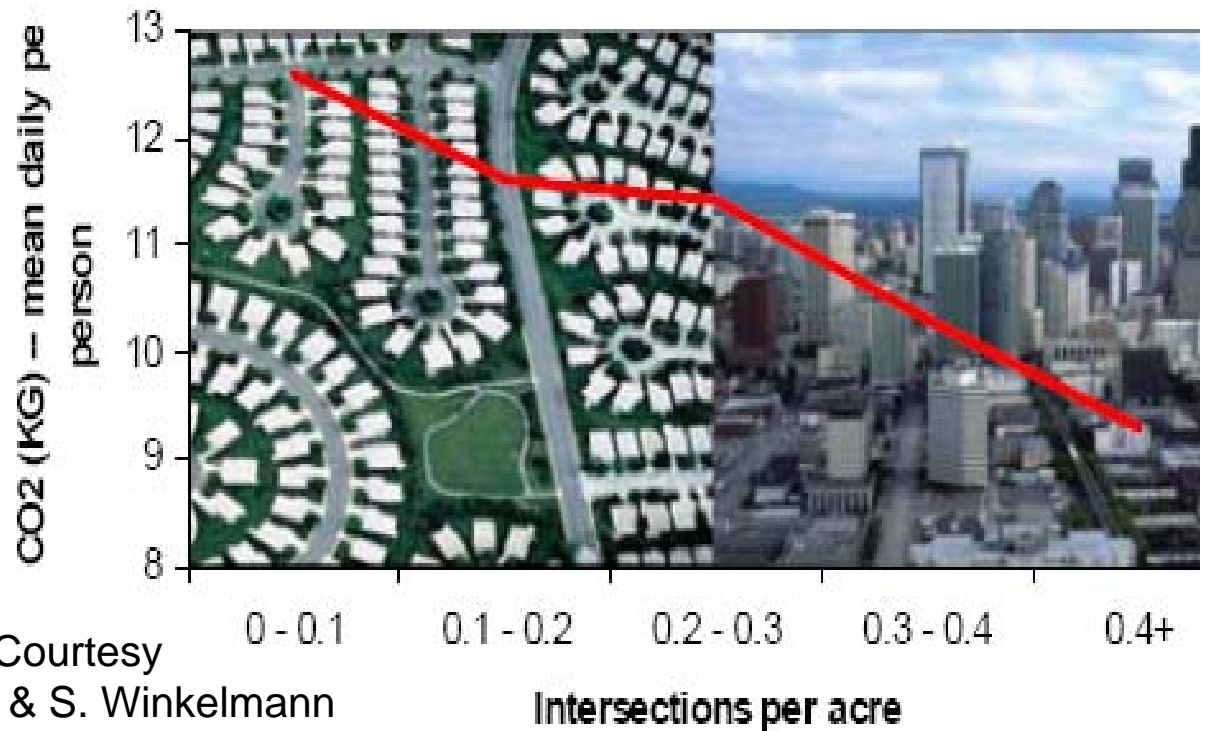
**Examined each station area's
Demographics, housing,
Commercial, economics**



Good Urban Form Supports Low-Carbon Travel:

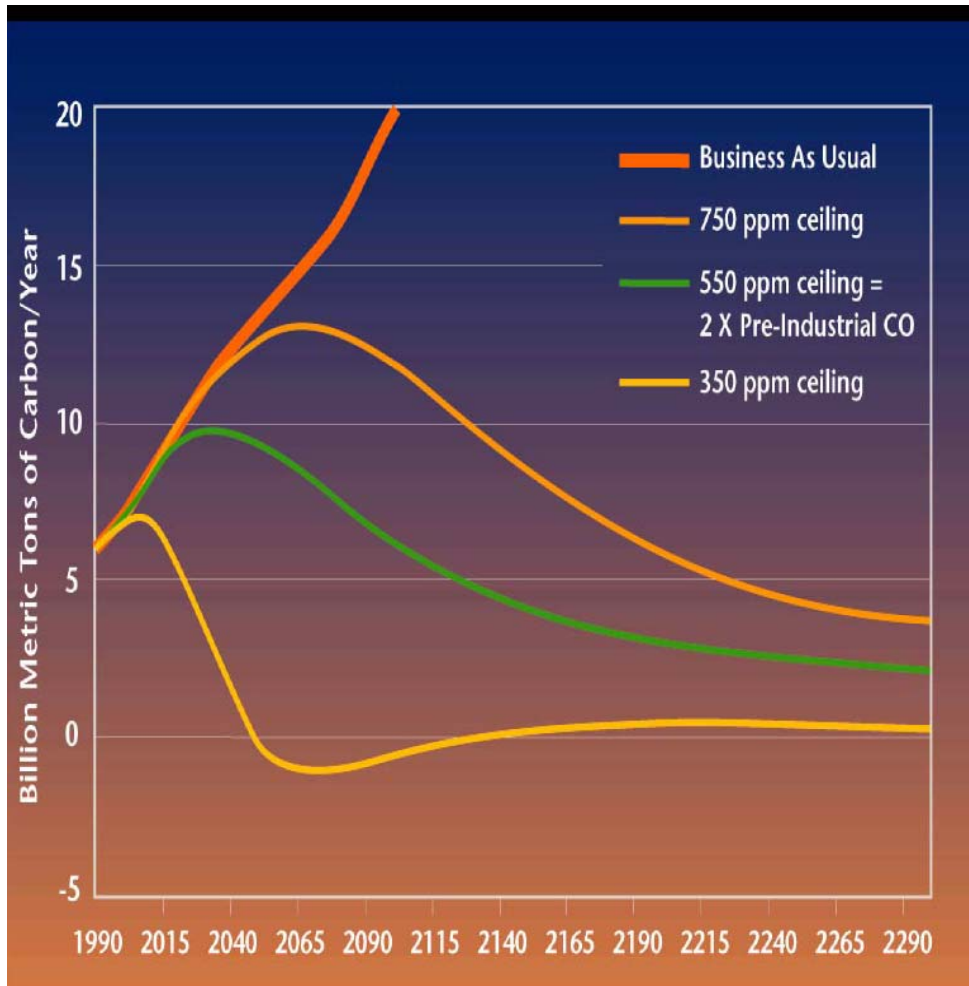
Convenient Remedy to an Inconvenient Truth

- Chicago has dense networks of sidewalks and streets
- The higher the connectivity, the lower the CO2 per HH
- Supports walking, biking, mixed-use land uses
- Helps avoid unnecessary car trips



Images Courtesy
L. Frank & S. Winkelmann

Time is Running Out



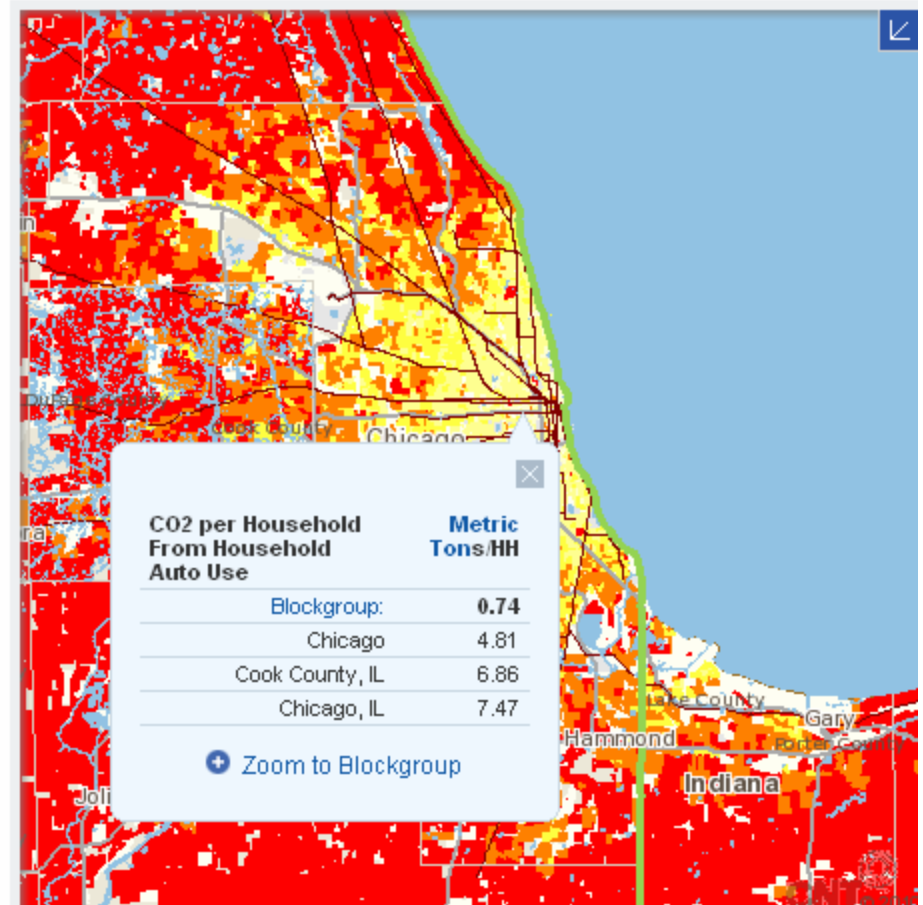
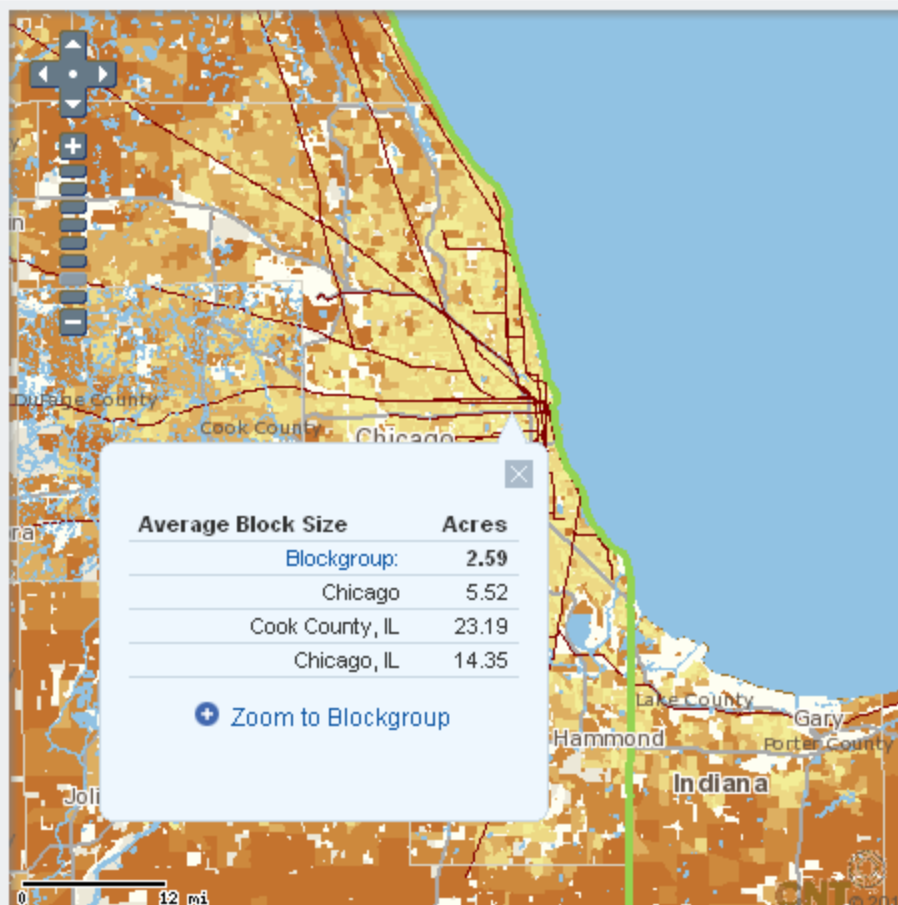
- Every ton counts
- Learning rates and deployment at least as important as invention
- A leaner world where “nothing and no one is wasted”
- Where we build and live is as important as what we build
- “No ton left behind”

Website Feature—

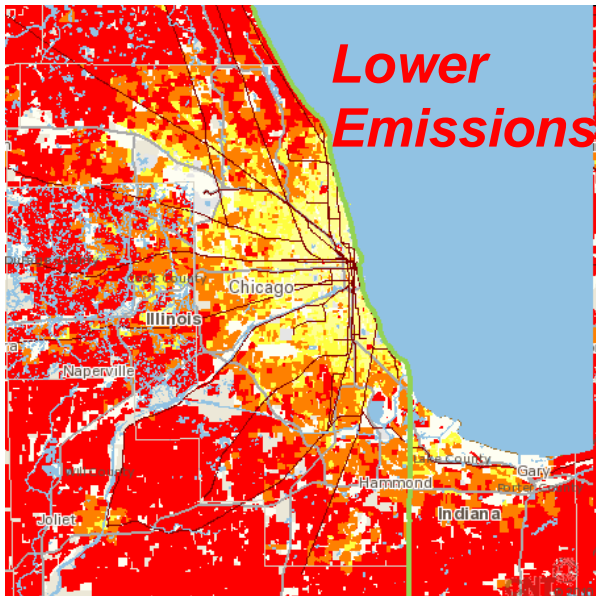
Comparing Urban Form Variable Such as Block Size with CO2 per HH from Driving

Average Block Size		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,970 with data)	5,584 (5,584 with data)
Minimum	0 Acres	0 Acres
Average	14 Acres	11 Acres
Maximum	630 Acres	387 Acres
Households	2,971,690	2,739,575

CO2 per Household From Household Auto Use		
Statistics	Region	Viewable Area on Map Below
Block Groups	5,970 (5,898 with data)	5,584 (5,512 with data)
Minimum	0.7 Metric Tons/HH	0.7 Metric Tons/HH
Average	7.5 Metric Tons/HH	7.1 Metric Tons/HH
Maximum	15.9 Metric Tons/HH	15.9 Metric Tons/HH
Households	2,971,528	2,739,413



What if the City is the Answer? Meeting the Challenge of a Resource-Constrained World by Counting the Benefits of Urbanism



Strategic Opportunities

- Reauthorization of surface transportation act—stalled due to reduced revenue and no agreement on how to address
- Studies show people will vote to tax themselves if its likely the money will “come home”—build better regional partnerships
- Shift obsession with homeownership to a balanced approach including accessible rental housing options

Emerging Federal Opportunities



- Livable Communities Act
- Transportation & Housing Affordability
Transparency Act
 - GSE Reform
- Infrastructure Finance—Consider copying the
“LA 30/10 Plan” for accelerated finance
 - Renewed Rental Housing Interest
 - Renewed Interest in Regional Economic
Development Strategy (“Reverse RFPs”)
- Continued HUD and DOT Leadership through
new offices, partner with DOE

Thank you!

- scott@cnt.org
- www.cnt.org
- <http://htaindex.org>
- <http://toddata.cnt.org>
- www.reconnectingamerica.org/ctod

