Increasing Housing Affordability by Considering Energy and Transportation Costs

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Energy Costs are a Key Element of Housing Affordability

♦ The first energy codes were established to reduce defaults due to high energy bills

♦ "Housing affordability" is an impediment to energy efficiency both in new homes and in retrofit projects

– Housing affordability is defined by informal lending industry regulations
– These regulations generally do not consider energy

Fannie Mae has an Energy Efficiency Mortgage Product, but...

♦ This product is no longer supported at Fannie Mae

♦ It is a lot of work for raters to use this product on behalf of their customers

♦ The credit for energy efficiency is less than 100% of savings

How the Lending System Underwrites Mortgages

♦ Underwriting is now performed by "blackbox" software

♦ The software considers a large number of factors including such data as credit ratings

♦ But one key parameter remains the ratio of housing costs to income; and

♦ Housing cost include only mortgage and insurance payments and exclude energy and transportation

What Should an Energy Efficiency Mortgage Look Like?

♦ From the consumers' point of view, there is little difference between a dollar of monthly obligations for energy and a dollar of monthly obligations for housing

– Actually, energy and transportation savings are worth more because they are not tax deductible, whereas mortgage interest is

What Should an Energy Efficiency Mortgage Look Like? II

◆ Reduced energy and transportation costs increase the security of the mortgage

◆ An energy efficient home will maintain tolerable standards of comfort even if utility expenditures are cut back drastically during periods of financial stress

◆ Thus, energy cost reductions of $1 should be treated the same as mortgage payment reductions of $1

Considering Housing and Transportation Costs Together

- Housing is the single largest household expenditure, at 32%.

  – Energy is a significant component of this

- Transportation is the second largest expenditure at 18%.

- Housing and transportation are connected fundamentally.

Place Matters

♦ Some neighborhoods require vastly less driving than others, controlling for income.

♦ The difference can exceed $500/month.

♦ This difference can be quantified statistically with high accuracy.

Improving Housing Affordability and Loan Performance

♦ Harnessing extra buying power resulting from lower transportation costs can allow more borrowers to qualify for loans, and allowing higher loan amounts for a given income.

♦ Defaults should be lower because a critical additional factor in the borrower's family budget is being considered.

The Location Efficient Mortgage® (LEM)

♦ Like an Energy Efficient Mortgage (EEM), except we use transportation savings rather than utility savings.

♦ Location Efficient Value (LEV) is the analog to utility cost savings.

♦ LEVs can be calculated simply on line at **locationefficiency.com**.

The LEM Worksheet

LOCATION EFFICIENT MORTGAGE CM
Making Urban Living Affordable

The LEM CM Worksheet

Please fill in all available fields, then press "**Continue**".

INCOME

What is your household's estimated annual **gross** income? (pre-tax)

Be Sure to Include:

- Salary from all members of household
- Commissions
- Regular Bonuses
- Child Support Income

$ 80000

MONTHLY OBLIGATIONS

What is the **minimum** amount you're required **by your creditors** to pay each month for credit cards, loans, and fixed payments?

Be Sure to Include:

- Credit cards
- Car payments
- Education loans
- Alimony and/or child support
- 401(k)

Do Not include your current mortgage payment if you have one

$ 200

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The LEM Worksheet II

ASSETS

What is the total amount of monies available for down payment and closing costs?

Be Sure to Include:

- Funds in savings and checking accounts
- Gifts that do not have to be repaid
- Down payment assistance funds
- Proceeds from the sale of your current home if you own one

$ `30000`   `Use minimum funds ▼`

HOUSEHOLD SIZE

What is the total number of people that will be occupying the location efficient property?

Be Sure to Include:

- Children and students

`3 ▼`

VEHICLES

How many personal vehicles (cars, trucks, sport utility vehicles), owned or leased, are operated by your household?

Be Sure to Include:

- The car loan or lease payments in the **Monthly Obligations** calculation

`0 ▼`

TERMS OF MORTGAGE

Interest Rate	Length of Mortgage	Current Rates: www.interest.com
`6.5` %	`30 ▼` year mortgage	

Continue

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The LEM Worksheet III

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LOCATION EFFICIENT MORTGAGE ℂℳ

Making Urban Living Affordable

Choose a location

At this point, if you know the address of a property you are interested in (or its Zip Code Plus 4) and would like to see its Location Efficient Value (LEV) -- the amount of transportation savings you can put towards your monthly mortgage payments -- enter that information in the following form.

ZIP CODE PLUS 4

If you know the Zip Code Plus 4 of the property you are interested in, you can enter it here and skip the detailed address below.

`94110` - `____`

Note: The Zip Plus 4-LEV Calculator is available for cities in the San Francisco Bay region.

ADDRESS

Number	Name	Unit #
300	Guerrero	

(if applicable)

Do not enter street type. *Example:* For Market St., enter "Market".
Note: If searching for a numbered street (eg. 92nd St.) , enter **only** the number itself, omitting the rest (eg. 92)

City	Zip Code
San Francisco	94110

Calculate LEV

Contact Webmaster

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The LEM Worksheet IV

LOCATION EFFICIENT MORTGAGE CM

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Results

Here's the Location Efficient Value, or LEV, for the address you entered. The LEV is the amount of transportation savings per month that can be put towards your mortgage payment.

Address

300 Guerrero
San Francisco, CA

Zip Code Plus 4

94103-3332 in Zone 75

Location Efficient Value (LEV)

$408

« Return to LEM CM Worksheet »

Your Criteria	
Income	$80,000
Monthly Obligations	$200
Assets	$30,000
Use All Funds?	No
Household Size	3
Vehicles	0
Interest Rate	6.5%
Mortgage Length	30 years

You can afford $63,644 -- or 27% -- more mortgage with a Location Efficient Mortgage CM. That's an increase in buying power of 80% of a year's income.

The LEM Worksheet V

Estimated Underwriting	Standard Mortgage	Location Efficient Mortgage
Maximum Home Price	$239,770	$305,383
Loan Amount *	$232,577	$296,221
Limiting Factor *	Income	Income
Estimated Monthly Payment *	$1,867	$2,476
Down Payment	$7,193	$9,161
Estimated Closing Cost	$4,795	$6,108
Monthly Principal and Interest	$1,418	$1,806
Estimated Monthly Taxes	$300	$382
Estimated Monthly Insurance	$149	$288
Funds Remaining *	$18,011	$14,731
Loan to Value	97%	97%

* The sales price and loan amount reflected here are only estimates. Many factors can contribute to your ability to qualify for a mortgage, and it is possible that you may qualify for considerably more or less than the amounts shown here. A professional loan officer will be able to provide you with the information you need to help you maximize your buying power.

* This tells you which factor limits you from obtaining a larger mortgage. If is says "Debt" then you need to decrease your monthly debt. If is says "Funds" then you need to get more money for the down payment. If is says "Income" then you are not limited by anything other than your household income.

* The monthly payment is the sum of the following: Monthly Principal & Interest, Estimated Monthly Taxes, and Estimated Monthly Insurance.

* The funds remaining is the amount of funds you entered minus the down payment and the closing cost.

Contact **Webmaster**
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Location Efficiency: Developing Scientifically Robust Relationships I

♦ Statistical Analysis Performed for 4 Major U.S. Metropolitan Areas.

♦ Unit of Analysis Was a Neighborhood

– The Metropolitan Areas Had 500 to 3,000 Neighborhoods.

♦ Dependent Variables: Automobile Ownership per Household and Vehicle Miles Traveled per Automobile.

Location Efficiency: Developing Scientifically Robust Relationships II

♦ Independent Variables Tested:

– Density (Housing Units per Acre)

– Public Transportation Availability (Buses per Hour Within Walking Distance).

– Neighborhood Jobs/Services: Number of Retail Businesses within Walking Distance.

– Access to Jobs.

– Pedestrian and Bicycle Friendliness.

– Households.

– Income.

– Household Size.

# Location Efficiency: Study Results

♦ Excellent Statistical Fits.

– R^2 for Auto Ownership Equation Exceeds 80%-90% for Some Cities.

♦ 4 Variables Highly Significant:

– Density

– Transit

– Income

– Household Size

♦ 2 Variables Modestly Significant:

– Pedestrian/Bicycle Friendliness

– Proximity to Jobs

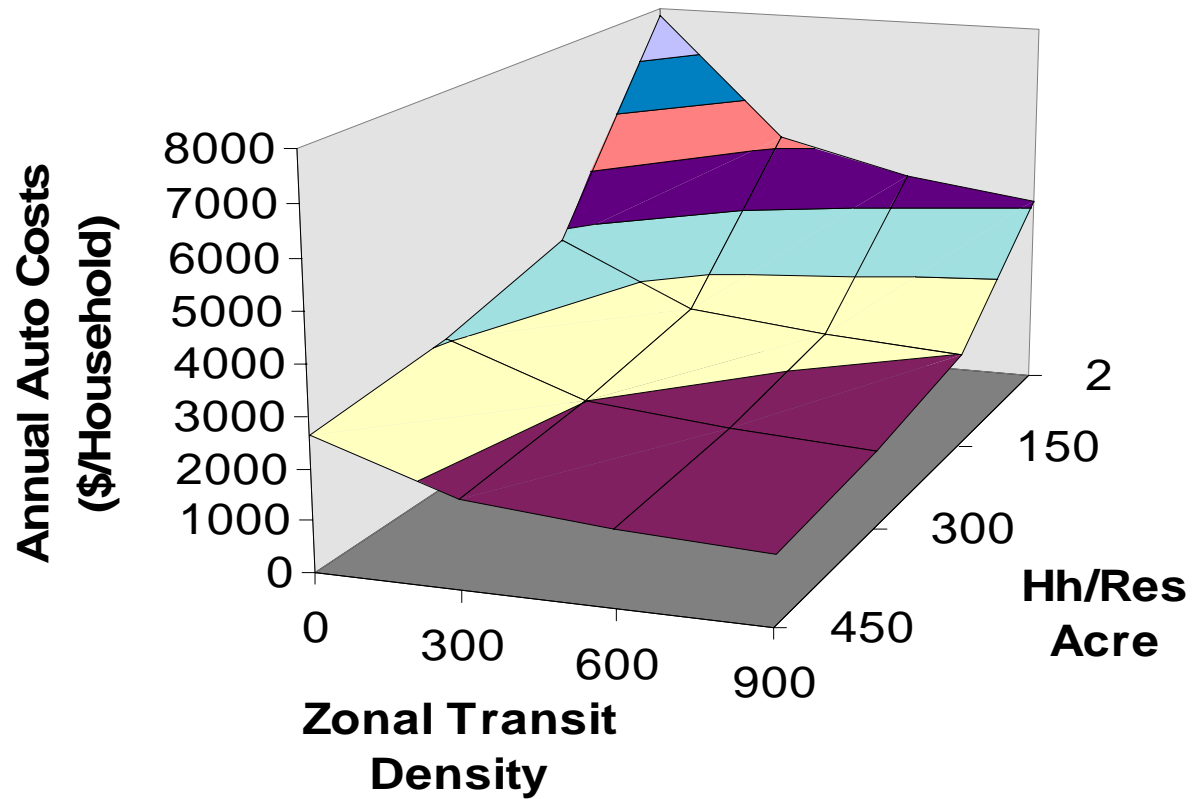# Vehicles per Household vs. Households per Residential Acre – San Francisco
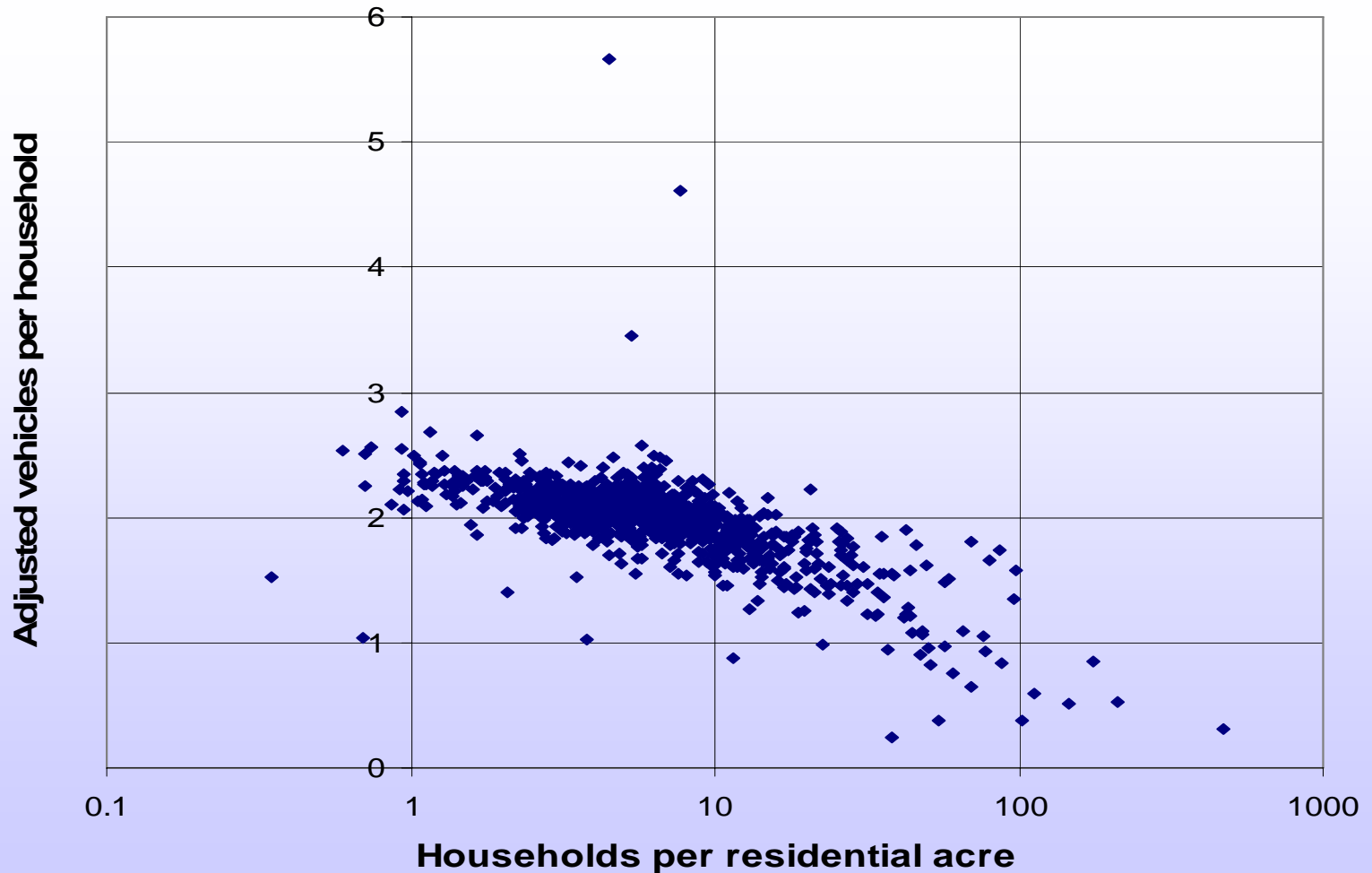
Vehicles per Household vs. Households per Residential Acre – Chicago

Adj Veh/HH versus residential density, Chicago
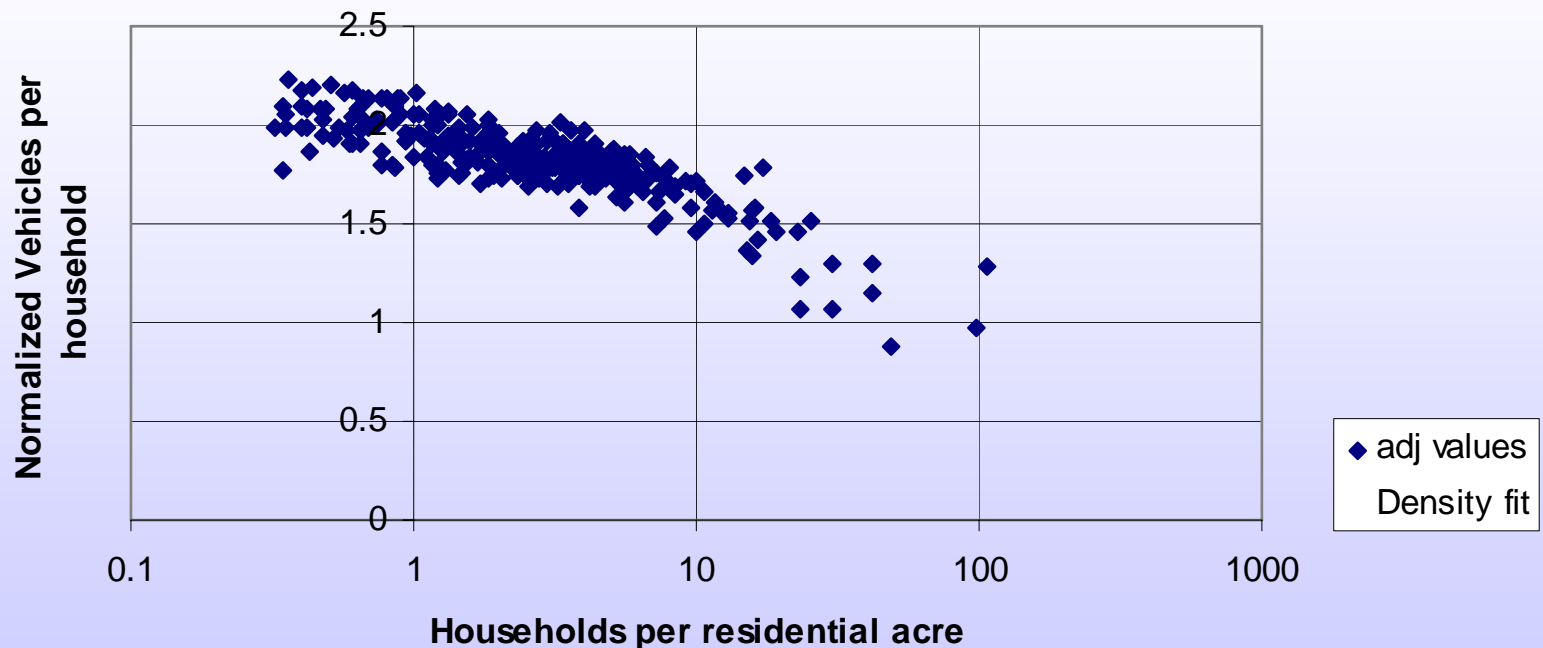
Results:

Impacts of Density and Transit on Auto Costs
San Francisco Bay Area

Calculating Savings for a Prospective Borrower

♦ Savings are based on fixed costs and variable costs of cars, less costs for public transportation.

♦ The Institute for Location Efficiency (ILE) assures quality of data and analysis.

Implementing an LEM

♦ We would need to develop a database of zip+4 neighborhoods for every Metro area.

♦ ILE can create an enhancement to locationefficiency.com to cover this area.

♦ Lenders would need to establish underwriting criteria for the LEM and begin to offer the product.

Underwriting Criteria

◆ The simplest and most direct criteria would be to consider LEV as an offset to PITI, just as is done for the EEM.

◆ Borrower counseling could increase transportation savings beyond those calculated, by changing consumer behavior.