



Notes from the May 3, 2007 LAND USE WHITE PAPER working group conference call and other Materials, including Housing Affordability regressions

Participating: Nelson Bills, Rod Howe, David Kay, Peter Marshall, Stephan Goetz

The group remains enthusiastic about preparing a White Paper that could be used for Public Issues Education with county agents. Here is an outline of what such a paper might accomplish, along with some questions about the paper.

Goal – use paper as a vehicle for engaging county agents, their community stakeholders.

Broader context or *umbrella*: Brookings forecasts a x % growth in new homes needed in the Northeast over the next 25 years (see appendix table below for new homes that to be built in your state). Brookings has a “tool” (see attached *USAToday* article), but it is crude and they do not have a mechanism for delivering it into individual communities (something we do have).

The two overarching questions are (1) where should this new housing growth be directed, and according to which sets of environmental-economic-social criteria (as opposed to just letting market forces play out without regard to any externalities created) and (2) are communities prepared or preparing themselves to provide the broad portfolio of homes needed to provide the range of housing choices that current and future residents need (desire, require)? Have municipalities really thought about this?

Note that we are talking about marginal (net) additions to the housing stock, and what matters is growth in the number of households, not necessarily growth in population.

Portfolio in terms of:

A. Open space and farmland preservation; what is the relationship among open space, housing affordability, and smart growth? The intersection of these areas may be quite small and something that we could meaningfully address (by researching the existing literature).

B. A range of housing options relative to socioeconomic and socio-demographic characteristics of the population. Can we think about this more broadly and systematically than the typical planner might? Gentrification and in-commuting of workers into places of work.

C. Green housing: the wave of the future? Initially, this kind of housing may be more expensive to construct and more costly to get into. However, over the long term the cost of heating, cooling and maintaining such homes may be lower. How does one get lower-income residents over this initial barriers. Do special mortgage products have to be developed (such as location-efficient or sensitive mortgages, as in the case where proximity to public transportation is factored in during the loan application).

**Another important factor that we consider/bring to the table is that of the broader regional perspective, rather than just the perspective of a local municipality.

Case studies (Rod Howe); some places are declining, others are growing rapidly. Can we anticipate what communities will look like 25 years from now by studying those that are ahead of the curve today? What issues will be coming to the fore? Can we use the new spatial or geographic data available on the web (NLCD) or is the quality too poor to make comparisons over time?

Resources/Inventory what extension/other partners are already doing in this arena.
Repository:

<http://www.nercrd.psu.edu/HousingLandUse/Resources.html>

Nelson Bills draft White Paper (2/13/07):

<http://www.nercrd.psu.edu/HousingLandUse/HousingandLandUseConcept.pdf>

Charlie French, modular homes in NH (in review)

Susan Westa, CT housing group

Center for Rural PA study on housing affordability

<http://www.jrap-journal.org/pastvolumes/2000/v37/F37-1-goetz.pdf>

Goetz' paper on the Economic Case for State Land Use Decision Making:

<http://www.jrap-journal.org/pastvolumes/2000/v37/F37-1-goetz.pdf>

Rural Development working paper (slightly longer):

<http://nercrd.psu.edu/Publications/rdppapers/rdp34.pdf>

Housing Affordability Regressions

Here are the first housing affordability regressions. Affordability is defined as median house price divided by media household income, so a higher value means *less* or lower affordability. The variable definitions, I hope, are self-explanatory... if not, please send me an e-mail (sgoetz@psu.edu). There likely are some problems with endogeneity, but this is a start. If you have ideas for improvements, please let me know.

Dependent Variable: Housing Affordability2000: ratio of median value of owners occupied housing units to Median HH Inco

Model	Unstand B	Stand Beta	t	Sig.	R_Sq	F_ratio
Model-I (Constant)	0.722		7.063	0.000	0.613	152.614
HAfford90_ratio of median value of H_unit to med HH Income1990	0.651	0.742	16.650	0.000		
Population density, 1990	0.000	0.013	0.326	0.745		
Popdlength9000: % growth of pop density 1990-2000	0.006	0.076	1.823	0.069		
Model-II (Constant)	4.692		5.532	0.000	0.742	61.710
HAfford90_ratio of median value of Hunit to med HH Income1990	0.681	0.776	13.930	0.000		
Population density, 1990	0.000	0.073	1.756	0.080		
Popdlength9000: % growth of pop density 1990-2000	-0.005	-0.065	-1.138	0.256		
Transfer of development right_Local, 1997	0.115	0.070	1.909	0.057		
% change in housing unit, 1990-2000	0.029	0.320	6.497	0.000		
average commuting time to work, census 2000	-0.188	-1.345	-6.011	0.000		
square term of commuting time	0.003	1.123	4.955	0.000		
amenity	0.028	0.039	1.000	0.318		
METRO03B	0.040	0.027	0.708	0.479		
MEDAGE00: Median age 2000	0.040	0.122	3.238	0.001		
PCOLLEGE: % college, 2000	-0.031	-0.385	-5.998	0.000		
PHIGHSCH: Percent High school , 2000	-0.040	-0.326	-5.276	0.000		
ETHNIC00: Ethnic diversity index, 2000	0.207	0.037	0.770	0.442		

This is a model of factors “explaining” the percent change in housing affordability between 1990 and 2000. A larger value of the dependent variable (positive coefficient estimate) means that housing affordability has deteriorated.

Dependent Variable: % Growth of Housing Affordability:1990-2000

Model	Unstand B	Stand Beta	t	Sig.	R_Sq	F_ratio
Model-I (Constant)	26.836		6.325	0.000	0.199	23.996
HAfford90_ratio of median value of Hunit to med HH Income1990	-11.381	-0.450	-7.020	0.000		
Population density, 1990	0.001	0.050	0.872	0.384		
Popdlength9000: % growth of pop density 1990-2000	-0.054	-0.025	-0.418	0.676		
Model-II (Constant)	163.827		4.506	0.000	0.199	16.203
HAfford90_ratio of median value of Hunit to med HH Income1990	-12.809	-0.506	-6.115	0.000		
Population density, 1990	0.001	0.070	1.136	0.257		
Popdlength9000: % growth of pop density 1990-2000	-0.442	-0.204	-2.386	0.018		
Transfer of development right_Local, 1997	5.716	0.122	2.219	0.027		
% change in housing unit, 1990-2000	1.044	0.404	5.527	0.000		
average commuting time to work, census 2000	-4.702	-1.166	-3.508	0.001		
square term of commuting time	0.069	0.976	2.897	0.004		
amenity	2.600	0.124	2.133	0.034		
METRO03B	2.394	0.055	0.981	0.327		
MEDAGE00: Median age 2000	1.926	0.204	3.644	0.000		
PCOLLEGE: % college, 2000	-1.236	-0.531	-5.568	0.000		
PHIGHSCH: Percent High school , 2000	-2.059	-0.580	-6.322	0.000		
ETHNIC00: Ethnic diversity index, 2000	10.395	0.065	0.901	0.368		

Appendix

Report gives communities a tool to match development to growth

By Haya El Nasser, USA TODAY

As the USA plans for the population growth from 2000 to 2030, the number of additional people it will have to accommodate looms large: 94 million.

Almost 60 million more housing units will be needed by 2030, concludes a Brookings Institution report being published Monday that analyzes U.S. housing needs. (Story: [Housing demand soars](#))

Knowing how much housing will be required gives states and local communities a chance to shape the way the landscape will look in coming decades.

"Development cannot be stopped but it can be directed and managed in a way to preserve quality of life," says John McIlwain, senior housing fellow at the Urban Land Institute, a research group in Washington, D.C., that tracks land-use trends.

The report by the Brookings Institution, a think tank in Washington, projects demand for housing, commercial and industrial space at the national, state and metropolitan levels.

Across the nation, development continues to spread outward from cities and suburbs to areas where land is cheaper. But living on the edge of metro areas may become costlier as gas prices increase, more toll roads are built and commute times get longer, McIlwain says.

At the same time, households are getting smaller as the population ages and young Americans delay marriage and parenting. These demographic shifts may reduce the need for traditional single-family homes on big lots in far-flung suburbs, says Arthur Nelson, author of the Brookings report and director of urban affairs and planning at Virginia Tech in Alexandria, Va.

Even the most developed areas can find room to build, he says. Nelson cites Arlington County, Va., a close-in suburb of Washington, D.C., that sits along a major subway line.

In 1990, Arlington had about 171,000 residents.

"At nearly 7,000 people per square mile for its 25 square-mile area, conventional wisdom was that it was built out," Nelson says.

But by 2002, 21,000 more people were living there and another 28,000 are expected by 2030.

Arlington worked with neighborhood groups and builders to redevelop abandoned areas — some were contaminated industrial sites called brownfields — and create dense commercial and residential centers near transit stops.

"Decisions that are made in planning that are bold and undo the mold can have a tremendous effect a generation later," Nelson says. "People want a different living environment. Communities that don't see these trends are going to struggle."

Among the regions trying to link public policy with growth patterns:

- Twenty governments in the Washington, D.C., area are bringing together developers, elected officials and environmentalists to talk about where to put the estimated 2 million people the region will gain in 25 years. Title of the Feb. 2 meeting: "Reality Check."
- Austin officials have been working on plan called "Envision Central Texas," to help decide how the five-county area can accommodate an extra 1.2 million people. In an effort to steer development to the urbanized center of the region, Austin is reviewing zoning codes that were written more than 50 years ago.

"This is something this community has never done before," says Austan Librach, an economic growth and redevelopment official with the city.



Cecil Lopez works on a home in Las Vegas.

Laura Rauch, AP

Expected losses, gains in the 50 states and D.C..

State	2000 housing units	Units lost 2000-2030	New housing units needed 2000-2030	2030 housing units
Ala.	1,963,711	369,315	928,696	2,523,092
Alaska	260,978	49,082	144,199	356,095
Ariz.	2,189,189	411,721	2,085,596	3,863,065
Ark.	1,173,043	220,614	645,034	1,597,463
Calif.	12,214,549	2,297,190	6,961,545	16,878,904
Colo.	1,808,037	340,038	1,324,038	2,792,037
Conn.	1,385,975	190,766	364,443	1,559,652
Del.	343,072	64,552	195,202	473,752
D.C.	274,845	51,690	36,431	259,585
Fla.	7,302,947	1,373,465	5,467,049	11,396,531
Ga.	3,281,737	617,196	2,088,852	4,753,392
Hawaii	460,542	86,614	198,904	572,832
Idaho	527,824	99,268	390,317	818,873
Ill.	4,885,615	850,830	1,811,438	5,846,223
Ind.	2,532,319	441,003	1,118,417	3,209,733
Iowa	1,232,511	214,642	395,247	1,413,117
Kan.	1,131,200	196,998	478,302	1,412,504
Ky.	1,750,927	329,297	797,355	2,218,985
La.	1,847,181	347,399	750,173	2,249,954
Maine	651,901	89,728	217,817	779,991
Md.	2,145,283	403,463	1,147,150	2,888,970
Mass.	2,621,989	360,891	780,544	3,041,642
Mich.	4,234,279	737,400	1,599,825	5,096,704
Minn.	2,065,946	359,784	1,125,465	2,831,627
Miss.	1,161,953	218,529	539,384	1,482,809
Mo.	2,442,017	425,277	1,091,492	3,108,232
Mont.	412,633	77,604	226,635	561,664
Neb.	722,668	125,853	314,335	911,150
Nev.	827,457	155,620	924,646	1,596,484
N.H.	547,024	75,292	261,107	732,838
N.J.	3,310,275	455,626	1,188,979	4,043,628
N.M.	780,579	146,803	529,081	1,162,857
N.Y.	7,679,307	1,056,980	2,064,069	8,686,396
N.C.	3,523,944	662,748	2,234,193	5,095,389
N.D.	289,677	50,447	92,668	331,898
Ohio	4,783,051	832,968	1,551,447	5,501,529
Okla.	1,514,400	284,813	716,079	1,945,666
Ore.	1,452,709	273,211	955,878	2,135,376
Pa.	5,249,750	722,576	1,344,395	5,871,569
R.I.	439,837	60,539	123,771	503,068
S.C.	1,753,670	329,813	1,034,291	2,458,148
S.D.	323,208	56,287	140,667	407,588
Tenn.	2,439,443	458,786	1,442,234	3,422,891
Texas	8,157,575	1,534,195	5,833,877	12,457,257
Utah	768,594	144,549	702,883	1,326,928
Vt.	294,382	40,519	121,578	375,441
Va.	2,904,192	546,191	1,672,007	4,030,007
Wash.	2,451,075	460,974	1,589,579	3,579,681
W.Va.	844,623	158,848	234,216	919,991
Wis.	2,321,144	404,227	1,039,379	2,956,296
Wyo.	223,854	42,100	95,507	277,261