

# Land Lines

APRIL 2011

LINCOLN INSTITUTE OF LAND POLICY



# Land Lines

APRIL 2011 • VOLUME 23, NUMBER 2

## EDITOR

Ann LeRoyer

## PRESIDENT & CEO

Gregory K. Ingram

## CHAIR & CHIEF INVESTMENT OFFICER

Kathryn J. Lincoln

## PUBLICATIONS AND MULTIMEDIA PROJECT COORDINATOR

Robyn F. Salbo

## DESIGN & PRODUCTION

David Gerratt & Amanda Wait  
www.NonprofitDesign.com

The Lincoln Institute of Land Policy is a private operating foundation whose mission is to improve the quality of public debate and decisions in the areas of land policy and land-related taxation in the United States and around the world. The Institute's goals are to integrate theory and practice to better shape land policy and to provide a nonpartisan forum for discussion of the multidisciplinary forces that influence public policy concerning the use, regulation, and taxation of land.

We seek to inform decision making through education, research, demonstration projects, and the dissemination of information through publications, our Web site, and other media. Our programs bring together scholars, practitioners, public officials, policy advisers, and involved citizens in a collegial learning environment. The Lincoln Institute of Land Policy is an equal opportunity institution.

*Land Lines* is published quarterly in January, April, July, and October to report on Institute-sponsored programs.

## For More Information

The Lincoln Institute Web site ([www.lincolnst.edu](http://www.lincolnst.edu)) provides a variety of features that make it easy for users to quickly obtain information on land and tax policy issues and on specific education programs, research, and publications. The e-commerce function permits users to order publications and multimedia products and to register for courses.

To receive Lincoln Institute mailings and email announcements and to download *Land Lines* issues and articles, working papers, policy focus reports, and other materials, go to the Web site ([www.lincolnst.edu](http://www.lincolnst.edu)) and select "Register." After you have registered, you can "Log In" at any time by entering your email address and password. To update your profile, you must log in and then select register.

Copyright © 2011. All rights reserved.

## Lincoln Institute of Land Policy

113 Brattle Street  
Cambridge, MA 02138-3400 USA

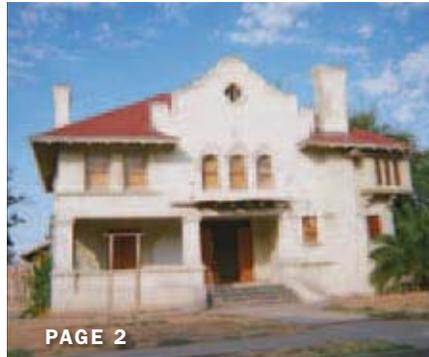
Tel: 617-661-3016 or 1-800-526-3873  
Fax: 617-661-7235 or 1-800-526-3944

E-mail: [annleroyer@lincolnst.edu](mailto:annleroyer@lincolnst.edu) (editorial content)  
[help@lincolnst.edu](mailto:help@lincolnst.edu) (information services)

Web: [www.lincolnst.edu](http://www.lincolnst.edu)



# CONTENTS



## FEATURES

### 2 The New American Ghost Towns

JUSTIN B. HOLLANDER, COLIN POLSKY, DAN ZINDER, AND DAN RUNFOLA

*Cities in the Sunbelt now face depopulation and housing vacancy rates akin to those observed in former industrial Rustbelt cities. Can this trend provide new planning opportunities for shrinking cities to become sustainable?*

### 8 The Municipal Fiscal Crisis and Payments in Lieu of Taxes by Nonprofits

DAPHNE A. KENYON AND ADAM H. LANGLEY

*PILOTs are voluntary payments made by tax-exempt nonprofits as a substitute for property taxes, but their revenue potential varies across municipalities because of large differences in the impact of the charitable property tax exemption on their tax bases.*

### 14 Betterment Levy in Colombia: Relevance, Procedures, and Social Acceptability

OSCAR BORRERO OCHOA

*The betterment levy has played a significant role in financing public works in Colombia and has been a major contributor to municipal revenues in cities such as Bogotá and Manizales, although their methodologies and implementation strategies are different.*

## DEPARTMENTS

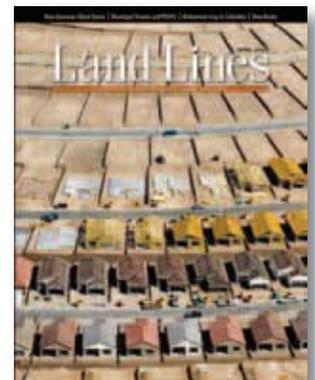
### 1 Report from the President

### 20 Faculty Profile: *Weidong Qu*

### 22 New Lincoln Institute Books: *Regional Planning in America* *Climate Change and Land Policies*

### 24 Other Publications and Programs

### 25 What's New on the Web: *Atlas of Urban Expansion*



## Housing: Future Imperfect

From 2000 to the end of 2005, the value of U.S. residential land and dwellings increased from \$14 trillion to \$24 trillion. Until about 2002, housing price increases had followed the normal pattern from the mid-1980s, and housing prices grew along with household incomes. But starting in 2002 housing prices began to grow much faster than incomes in most metropolitan areas.

There were three main causes for this acceleration in housing prices. First, the interest rate for 30-year fixed rate mortgages declined from 7 percent in 2001 to 4.6 percent in 2003, buoying housing prices. Second, starting in the early 2000s mortgage originators began to reduce lending standards and to offer high-risk mortgage instruments such as no-document mortgages and other subprime mortgage instruments. Finally, the national policy to increase home ownership supported the latter trend because increased mortgage availability seemed to increase housing affordability.

These changes led to the rapid growth in mortgages with high loan-to-value ratios and to the approval of borrowers with modest financial reserves. This increasing risk of mortgages was assuaged by the belief that “housing prices could not decline,” which was based on national housing price indices dating back a few decades. Of course, in several metropolitan areas housing prices had declined from 1989 to the mid-1990s, but the national price index had only flattened out in this period.

Nationally, house prices softened in 2006 and fell 30 percent to the present time, while housing starts declined precipitously from 2.27 million in 2006 to 500,000 now, a level well below the typical low point of 1 million starts experienced in the past half dozen recessions. The reduction in housing starts eliminated millions of construction jobs and contributed significantly to the rapid increase in the unemployment rate.

The accompanying financial crisis reduced employment more broadly as part of a severe recession. Mortgage defaults and subsequent foreclosures spiked, caused by the



**Gregory K. Ingram**

severe housing price decline that left many homeowners “under water” with a mortgage greater than their house value, combined with the loss of household income from unemployment and the tightening of lending standards that made refinancing impossible for many households. From 2006 through 2009, 6 million homes were foreclosed, and 2010 has seen another 2.9 million foreclosure filings. Foreclosure rates are likely to have peaked,

and filings in December 2010 were a quarter lower than those in December 2009. But foreclosure rates remain far above historic levels—in 2005 banks foreclosed on about 100,000 homes. The lack of recovery in housing and other construction has in turn been a factor in the slow reduction in unemployment.

House prices may now be stabilizing—national housing prices rose in the second quarter of 2010, but have declined modestly in the third and fourth quarters. This has led some analysts to forecast a possible second round of price declines. In any case, the likely slow decrease in unemployment will continue to restrain income growth and demand for home ownership. Clearly, housing will not lead the economy out of this recession. Needed now is regulatory reform to prevent the repetition of a housing bubble and an inevitable subsequent housing bust and its related financial meltdown.

While some modest steps have been taken in this direction, much remains to be done and the announced reform of Fannie Mae and Freddie Mac have increased uncertainty about the course of future mortgage finance. The realization by households that housing price appreciation is not inevitable will likely slow the shift to ownership by younger households and encourage older empty-nesters to move their assets to investments less risky than housing. The resulting growth in rental demand will focus in denser parts of metropolitan areas and give some impetus to smart growth outcomes. Housing demand will be robust only in several years, driven by long-term growth in incomes, population, and household formation.

# The New American Ghost Towns

Unkempt lawns and crumbling facades are signs of abandonment on this once grand house in Fresno, California.



© Justin B. Hollander

*Justin B. Hollander, Colin Polsky, Dan Zinder, and Dan Runfola*

Over the last several years, growing public attention has centered on the fallout from the subprime lending debacle—an unprecedented event that has resulted in massive foreclosures and widespread housing vacancy in what had been the perennially growing Sunbelt (Goodman 2007; Leland 2007). Across the southern United States, from Atlanta, to Fort Meyers, to Phoenix, massive new housing developments are largely unoccupied while older housing is abandoned due to foreclosure. Cities in the Sunbelt now exhibit housing vacancy rates akin to those observed in former industrial Rustbelt cities.

This situation leads to two critical questions: Can Sunbelt cities manage the land use changes that this unstable (and unpredictable) economic

market has created, while still maintaining at least the status quo for remaining residents? Are these changes providing new planning opportunities for urban sustainability?

In our work with the Lincoln Institute, we conducted an empirical study to begin to answer those questions (Hollander et al. 2010). The United States Postal Service (USPS) regularly releases datasets that provide information on occupied housing units for each zip code. We were able to obtain household residential delivery data for all zip codes in the lower 48 states for three time periods: the beginning of the real estate boom (February 2000); the peak of the real estate market (February 2006); and a time of high foreclosures and significant decline in real estate markets (February 2009).

The key indicator employed in our study was derived from the USPS dataset: occupied housing units. The USPS data lists how many housing units received mail during a given month in each

zip code. When no one is receiving mail at a location, it is considered vacant. After 90 days of vacancy, the USPS no longer lists the unit as active and, for our purposes, removes it from the occupied housing unit list.

Following a methodology developed by Hollander (2010), we noted changes in occupied housing unit density from one period to the next. It was possible to analyze this because zip code boundaries remained constant in our study sample. We focused on broad shifts in occupancy in a given zip code as being indicative of widespread vacancy and abandonment.

Two time intervals were selected for analysis: February 2000 to February 2006, and February 2006 to February 2009. The first period corresponds with the housing boom years, and the second period with the slowing of the boom into the foreclosure crisis. Change for each time interval and each zip code was calculated by subtracting the total count of households at the end of each interval from the count at the beginning.

### Data Tabulation, Mapping, and Analysis

In addition to comparing national indicators of household change between the two periods, each dataset was separated into urban, suburban, and rural areas. Urbanized Areas, as defined by the United

States Census, provided boundaries for our urban areas. Areas between the Urbanized Area and the Metropolitan Statistical Area boundary lines were considered suburban, and areas outside of Metropolitan Statistical Areas were considered rural.

For each of these regions and for both time intervals, we analyzed the following factors for both declining and gaining zip codes:

- number of zip codes with a net decline or gain in housing occupancy;
- total square mileage within those zip codes;
- total net housing loss (or gain) for all declining (and gaining) zip codes; and
- percentage of the total housing units lost (or gained) in declining (or gaining) zip codes.

The data were also mapped in three categories to display which zip codes were losing and gaining housing units for each time interval. Zip codes that had a net loss of 30 or more housing units were mapped as “losing,” those that gained 30 or more units were mapped as “gaining,” and those that lost or gained up to 29 units were considered as having no significant change.

Two measures of spatial autocorrelation—Global Moran’s I and a Univariate Local Indicator of Spatial Association (LISA)—were used to explore spatial clustering of USPS’s housing



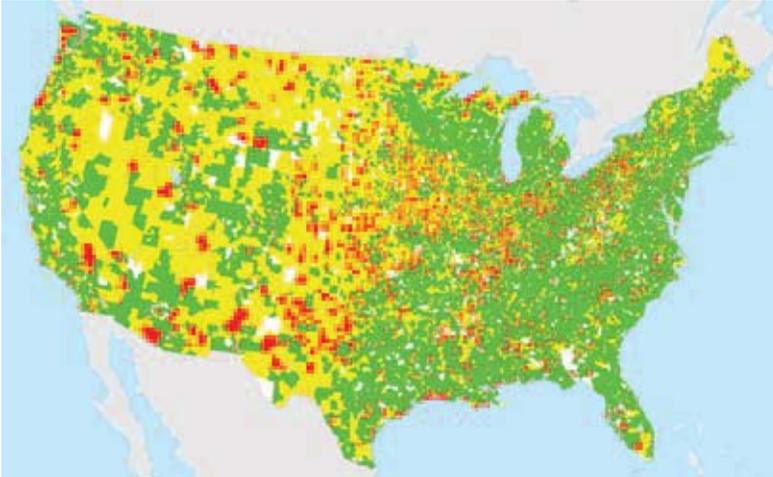
Closed loan offices are a sign of the times in Orlando, Florida.

© Justin B. Hollander

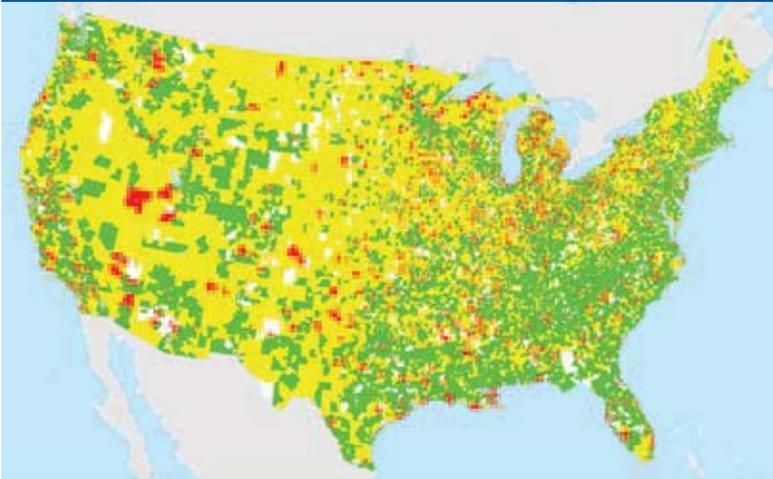
**TABLE 1**  
**Summary Statistics for Zip Codes with a Net Decline in Housing Occupancy, 2000–2006**

	Total US	Urban	Suburban	Rural
Total Count of Zip Codes	29,026	7,143	13,801	8,082
Square Miles	3,429,778	145,234	1,448,650	1,935,333
Number of Zip Codes with Declining Housing Occupancy	5,656	2,124	1,634	1,924
Percentage of Zip Codes with Declining Housing Occupancy	19.5%	29.7%	11.8%	23.8%

**FIGURE 1**  
**2000–2006 Household Delivery Change Analysis Map**



**FIGURE 2**  
**2006–2009 Household Delivery Change Analysis Map**



**Change in Housing Occupancy by Zip Code**

- Lost More Than 30 Units
- Change Between -30 and 30 Units
- Gained More Than 30 Units
- No Data

Data source for Figures 1–4:  
 USPS Housing Occupancy Data,  
 2000–2009.

Note: Some zipcodes were removed from  
 the analysis where data errors existed.

unit occupancy change data and thus identify broad areas that were impacted most severely. In this analysis, the GeoDA software package was used to run the Global Moran’s I and Univariate LISA tests, with results shown only for zip code clusters with significance at 0.01 for the Global Moran’s I test and 0.05 for the LISA test.

Four possible results are derived from the Univariate LISA test, in which “high change” refers to an increase in housing occupancy of more than 30 units in a zip code and “low change” refers to a decrease of more than 30 housing units.

1. High-high clustering: high change zip codes surrounded by high change zip codes
2. Low-low clustering: low change zip codes surrounded by low change zip codes
3. Low-high clustering: low change zip codes surrounded by high change zip codes
4. High-low clustering: high change zip codes surrounded by low change zip codes

The high-high and low-low results indicate local clustering, while the high-low and low-high results indicate outliers or “islands” (Anselin 1995).

**Findings**

This analysis of the USPS occupied housing dataset revealed a number of trends that provide a spatial and statistical context for understanding the foreclosure crisis and numerous paths for further investigation. We had anticipated finding significantly more zip codes with a decline in occupied housing in the 2006–2009 period than the 2000–2006 period. Though the latter period did have 16.4 percent more declining zip codes than the former period, this increase was not as high as expected given the assumption of a boom vs. bust comparison.

However, when the dataset was separated into urban, suburban, and rural areas, much more distinctive trends were evident (tables 1 and 2).

**TABLE 2**  
**Summary Statistics for Zip Codes with a Net Decline in Housing Occupancy, 2006–2009**

	Total US	Urban	Suburban	Rural
<b>Total Count of Zip Codes</b>	28,670	6,949	13,340	8,474
<b>Square Miles</b>	3,400,981	139,771	1,390,027	1,884,710
<b>Number of Zip Codes with Declining Housing Occupancy</b>	6,586	2,084	2,333	2,189
<b>Percentage of Zip Codes with Declining Housing Occupancy</b>	22.9%	30.0%	17.4%	25.8%

Suburban areas registered 42.8 percent more declining zip codes in the latter (2,333) than the former period (1,634) and rural zip codes registered 13.8 percent more declining zip codes in the latter (2,189) than in the former period (1,924), whereas urban areas had only 1.9 percent fewer declining zip codes in the latter period (2,084 versus 2,124).

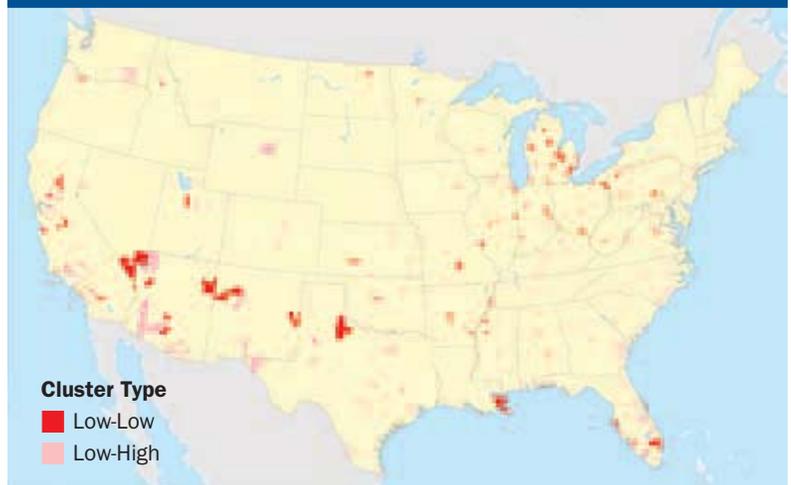
Figures 1 and 2 illustrate the occupied housing unit gains and losses during both periods. The 2006–2009 interval was marked not only by an increase in the size and number of declining (red) zip codes but a slowing of growth in many previously expanding areas, as indicated by the increase in no-change (yellow) zip codes in previously expanding regions. Decline also became more prevalent in new areas. The upper Midwestern states (Michigan, Wisconsin, Northern Illinois, and Minnesota) and the Sunbelt region (including Phoenix, Las Vegas, Los Angeles, the San Francisco Bay Area, New Orleans, and the outskirts of Florida’s coastal cities) showed noticeable increases in declining zip codes. In contrast, declines in the Great Plains, Mississippi River corridor, western Pennsylvania, and the Pacific Northwest were either less pronounced or reversed in the latter period.

The results of the Global autocorrelation tests indicated spatial clustering existed in the dataset. Not surprisingly, the LISA analysis found declining clusters prevalent in regions that had high percentages of declining zip codes, generally in both intervals (figures 3 and 4). However, it was surprising that fewer low-low (declining) clusters were found in the 2006–2009 period. The 2000–2006 period shows low-low clusters, particularly in the Great Plains states, the Mississippi River corridor, and western New York and Pennsylvania. Despite having more total declining zip codes, less low-low clustering occurred in the 2006–2009 period. However, clustering did occur in new territory including the upper Midwest, South Florida, New Orleans, the Southwest, and California.

**FIGURE 3**  
**2000–2006 LISA Analysis Map**



**FIGURE 4**  
**2006–2009 LISA Analysis Map**



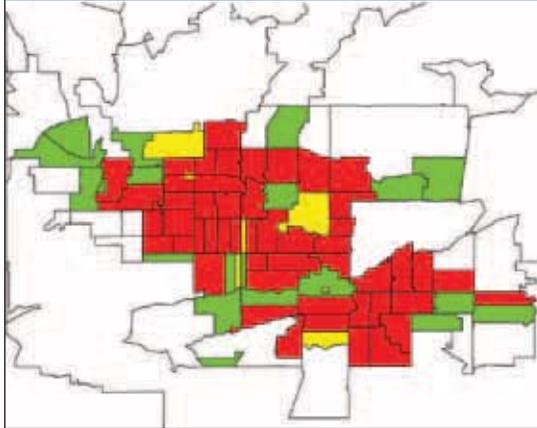
### Application of the Findings

Since completing the working paper on which this article is based, its findings have influenced further on-the-ground research. Widespread instances of decline in metropolitan areas in the Sunbelt led to

**FIGURE 5**  
Phoenix: Household Delivery Change, 2006–2009

**Housing Change**

- Lost More Than 30 Units
- Change Between -30 and 30 Units
- Gained More Than 30 Units
- Not in the Urbanized Area



Data source for Figures 5–7:  
USPS Household Delivery Data, 2006–2009.

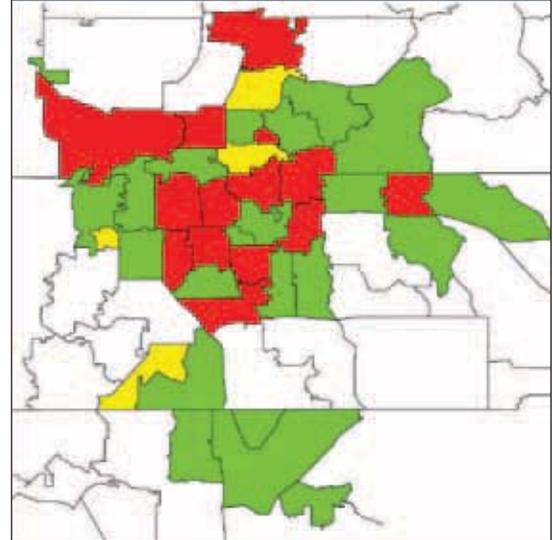
more targeted research in cities shown to be among those most severely impacted by the recession of the late 2000s. Three cities are examined as case studies by Hollander (2011): Phoenix, Orlando, and Fresno (figures 5, 6, and 7).

In Phoenix, a fire-hot real estate market led to widespread overbuilding of housing in recent years. Developers converted farms in the Laveen neighborhood into housing subdivisions, in some cases finishing only half of them. In Orlando, inner city neighborhoods that had experienced rebirth in the mid-2000s are stricken by widespread foreclosures today, leading to arson and high vacancy levels. Many of the grand older houses of Fresno are now overrun with weeds and decay as demand for housing has plummeted in this center of California’s agricultural industry. With jobs scarce, people are fleeing former boomtowns and leaving behind a new type of vacancy and abandonment. In these cities and others, entire blocks that had been fully occupied now have half or more of the housing stock unoccupied.

Additionally, the number of new declining zip codes found in Metropolitan Statistical Areas in this study raises more specific questions about how the recent recession has impacted different parts of the country. This finding challenges the belief that urban cores are most prone to decline while suburban growth will continue in perpetuity.

This shift in declining neighborhoods from urban to suburban areas spurred another related

**FIGURE 6**  
Orlando: Household Delivery Change, 2006–2009



study that broke metropolitan regions down into central cities, inner ring suburbs, and outer ring suburbs (Zinder 2010). It used statistical metrics to compare trends within those subsets of the metropolitan region and added another round of evidence that suburban decline is becoming more pervasive in most regions of the country.

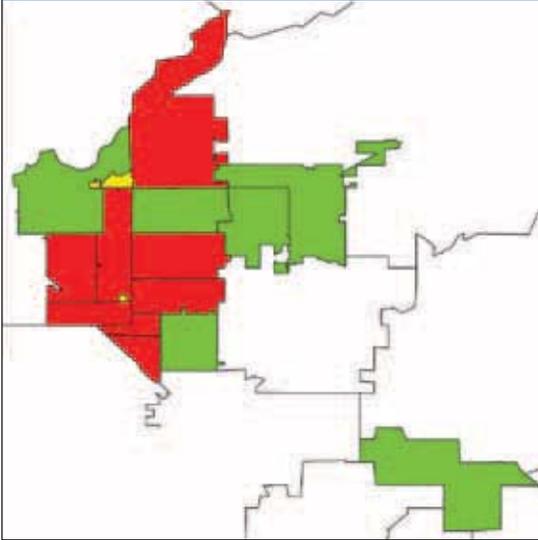
Zinder found more new declining zip codes in all suburban regions during the recent recession than in the previous period and determined that outer ring suburbs sustained the largest increase of new zip codes with a net decline in housing occupancy. In contrast, the total number of declining zip codes in central cities decreased. This study also provided additional support for the regional trends reported here showing particularly deep impacts in southwestern cities and outer ring suburbs in the Midwest, South, and Northeast.

**Concluding Remarks**

The findings from this research effort indicate that the face of declining cities and regions in America has begun to change. Though many areas previously hit by economic downturns have continued to feel their impacts, decline is no longer limited primarily to older manufacturing towns, urban cores, and declining rural farming communities. Places that had prospered in more recent times, including Sunbelt cities and remote suburbs, have begun to see declines in occupied housing stock as well and were, in fact, the places hit hardest by the

FIGURE 7

Fresno: Household Delivery Change, 2006–2009



subprime lending crisis. It is important to note that housing abandonment (i.e., a drop in occupied housing unit density) is one manifestation of neighborhood change, but it is only part of a larger story of metropolitan growth and decline. We focus here on those neighborhoods in decline, but in the future we will be attuned to growing neighborhoods as well.

Our research located some statistically significant clusters of zip codes experiencing home abandonment in recent years. The next question to answer is: What social processes and factors explain this clustering? In future phases of this research, we plan to examine how changes in occupied housing density have been dispersed throughout major Census-defined Urbanized Areas and begin to employ advanced multivariate statistical techniques to understand the key attributes associated with clusters of decline.

Should current trends persist in years to come, planners and policy makers will need to be better prepared, perhaps by looking to models adopted by other communities to build upon existing assets while embracing population decline. Understanding these complex dynamics will help community leaders come to terms with the challenges their cities and regions face. This article provides an introduction to a methodological approach to identify these trends in nearly real time to help quantify impacts on a given zip code, city, or region. **L**

#### ABOUT THE AUTHORS

**JUSTIN B. HOLLANDER** is an assistant professor in the Department of Urban and Environmental Policy and Planning at Tufts University in Medford, Massachusetts, and a research scientist at the George Perkins Marsh Institute at Clark University in Worcester, Massachusetts. Contact: [justin.hollander@tufts.edu](mailto:justin.hollander@tufts.edu)

**COLIN POLSKY** is an associate professor at the Graduate School of Geography and associate dean for Undergraduate Research & Active Pedagogy at Clark University. He is a geographer specializing in the human dimensions of global environmental change. Contact: [cpolsky@clarku.edu](mailto:cpolsky@clarku.edu)

**DAN ZINDER** is a recent graduate of masters degree program in Urban and Environmental Planning at Tufts University. His research interests include land use policy, declining cities, GIS, and sustainability. Contact: [dan.zinder@gmail.com](mailto:dan.zinder@gmail.com)

**DAN RUNFOLA** is a Ph.D. student at Clark University. His research interests include remote sensing, GIS, land change science, and vulnerability. Contact: [drunfola@clarku.edu](mailto:drunfola@clarku.edu)

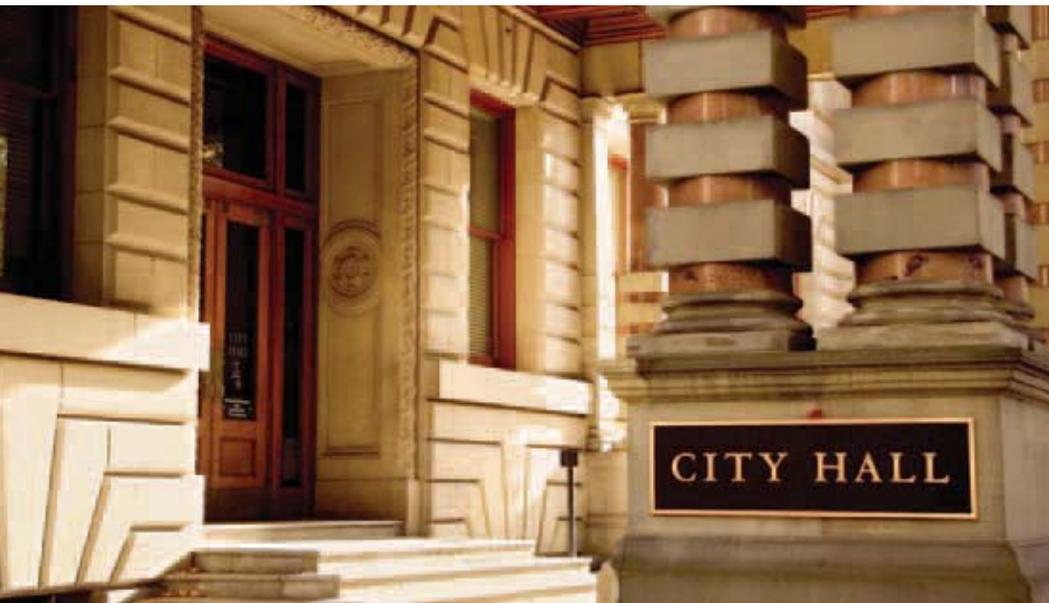
#### ACKNOWLEDGMENTS

Many thanks go to Nick Giner ([nginer@clarku.edu](mailto:nginer@clarku.edu)) for his contributions to the spatial autocorrelation analysis used in this research. Much of the methodological explanation is based directly on his work on the spatial distribution of lawns in Massachusetts.

#### REFERENCES

- Anselin, Luc. 1995. Local indicators of spatial autocorrelation—LISA. *Geographical Analysis* 27:93–115.
- Goodman, Peter S. 2007. This is the sound of a bubble bursting. *The New York Times*. December 23.
- Hollander, Justin B. 2010. Moving towards a shrinking cities metric: Analyzing land use changes associated with depopulation in Flint, Michigan. *Cityscape: A Journal of Policy Development and Research* 12(1):133–151.
- Hollander, Justin B. 2011. *Sunburnt cities: The great recession, depopulation, and urban planning in the American Sunbelt*. London/New York: Routledge.
- Hollander, Justin, Colin Polsky, Dan Zinder, and Dan Runfola. 2010. The new American ghost town: Foreclosure, abandonment, and the prospects for city planning. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.
- Leland, John. 2007. Officials say they are falling behind on mortgage fraud cases. *The New York Times*. December 25.
- Zinder, Daniel H. 2010. *Through the rings: A study of housing occupancy declines across major urbanized areas in the United States*. Medford, MA. Tufts University.

# The Municipal Fiscal Crisis and Payments in Lieu of Taxes by Nonprofits



*Daphne A. Kenyon and Adam H. Langley*

**M**unicipalities around the country face a daunting fiscal crisis. Federal stimulus assistance has expired, and many states have made significant cuts in aid to municipalities. Meanwhile property values have declined 31 percent since their 2006 peak according to the S&P/Case-Shiller national home price index.

It will take several years to know how this historic decline will affect property tax revenues, because changes in property tax bills significantly lag changes in market values. However, cities faced declines in general fund revenues of 2.5 percent in 2009, and approximately 3.2 percent declines in 2010 (Hoene 2009; Hoene and Pagano 2010). Municipal responses to revenue shortfalls have included making cuts to personnel (71 percent of cities), delaying or cancelling capital projects (68 percent), and making across the board cuts (35 percent) (McFarland 2010).

To avoid further cuts, municipalities will need to raise additional revenues. But with anti-tax sen-

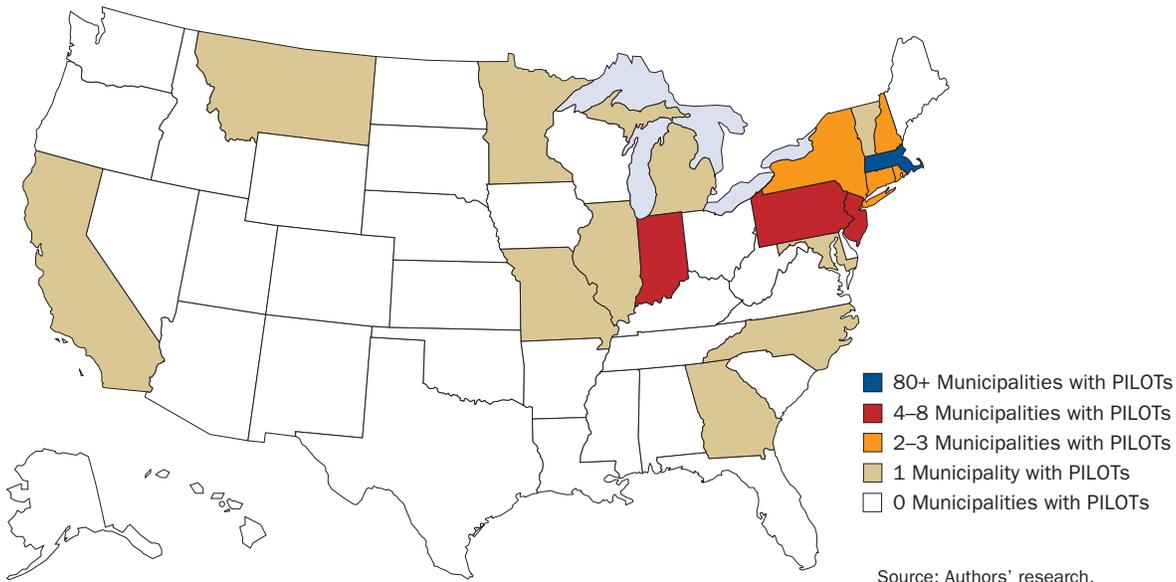
timent running high, many cities and towns may try to avoid raising tax rates and look instead to increased reliance on fees and other alternative revenue sources. One alternative that has attracted the attention of many local officials recently is payments in lieu of taxes (PILOTs) by nonprofit organizations.

PILOTs are voluntary payments made by tax-exempt nonprofits as a substitute for property taxes. These payments typically result from negotiations between local government officials and individual nonprofits, but the exact arrangements vary widely. PILOTs can be formal, long-term contracts, routine annual payments, or irregular one-time payments. The

payments can go into a municipality's general fund, or be directed to a specific project or program. PILOTs are most frequently made by hospitals, colleges, and universities, but also by nonprofit retirement homes, low-income housing facilities, cultural institutions, fitness centers, and churches. Some such payments are not even called PILOTs, but are known as "voluntary contributions" or "service fees."

Since 2000, PILOTs have been used in at least 117 municipalities in at least 18 states (Kenyon and Langley 2010). These payments are concentrated in the Northeast, and especially in Massachusetts where they have been made in 82 out of 351 municipalities (figure 1). It is hard to make definitive statements about trends in the use of PILOTs, because there is no comprehensive source that tracks them, but press accounts suggest growing interest in PILOTs since the early 1990s, with a noticeable uptick in recent years. Major multi-year agreements have recently been reached in Pittsburgh and Baltimore; commissions have studied PILOTs in Boston, New Orleans, and Providence; and many smaller municipalities have reached new agreements with local charities.

**FIGURE 1**  
States with Municipalities Collecting PILOTs (2000–2010)



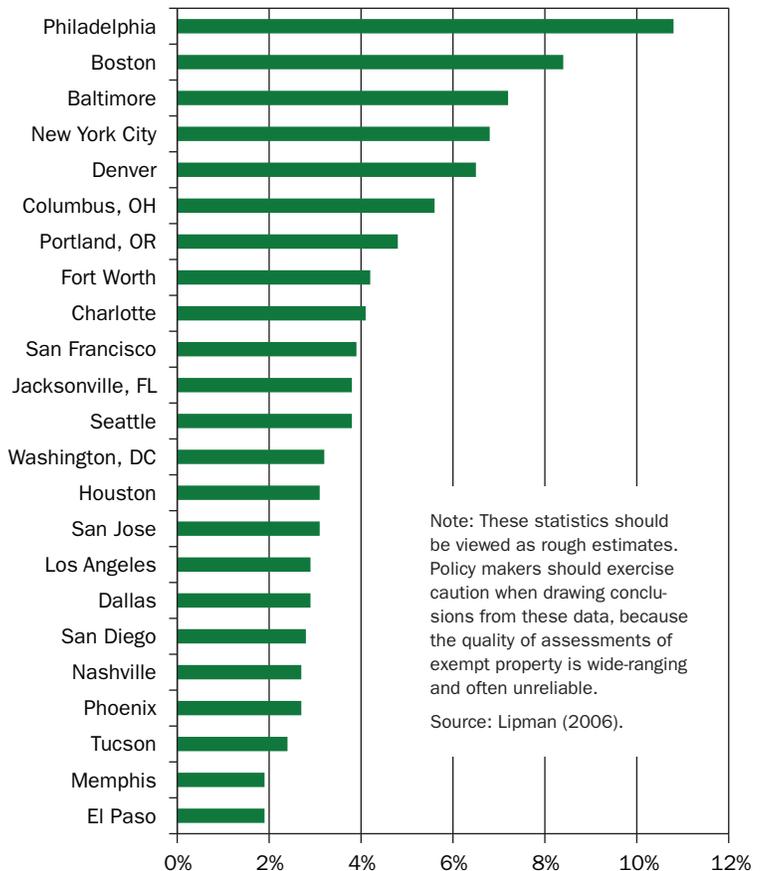
### The Revenue Potential of PILOTs

The revenue potential of PILOTs varies across municipalities because of large differences in the impact of the charitable property tax exemption on their tax bases. Figure 2 shows that in 23 large U.S. cities the value of tax-exempt nonprofit property as a share of total property value ranged from 10.8 percent in Philadelphia to 1.9 percent in Memphis and El Paso. Similarly, a fiscal year 2003 study of 351 municipalities in Massachusetts found that if the tax exemption for charitable and educational nonprofits were removed, these organizations would account for more than 10 percent of the property tax levy in 18 municipalities and between 2.5 and 10 percent in another 68, but less than 1 percent of the tax levy in 179 municipalities (McArdle and Demirai 2004).

Since nonprofit property tends to be highly concentrated in a relatively small number of municipalities, especially central cities and college towns, PILOTs have the potential to be a very important revenue source for some municipalities, even if they are unlikely to play a significant role in financing local government in the majority of cities and towns. Table 1 looks at PILOTs in ten municipalities where they rarely account for more than 1 percent of total revenues, but the dollar figures are often significant.

The impact of the charitable property tax exemption on municipal budgets also depends on the

**FIGURE 2**  
Estimated Value of Exempt Property Owned by Nonprofits as a Percent of Total Property Value



degree of reliance on property taxes as a revenue source. Local governments with a heavier reliance on sales and excise taxes, user fees, or state aid are in a better position to deal with forgone property tax revenues through those other sources.

**Collaboration on PILOT Agreements**

In seeking PILOT agreements, local officials sometimes resort to adversarial pressure tactics, which can backfire and jeopardize important relationships between municipalities and nonprofits. A more collaborative approach is usually more successful when local officials work to build genuine support among nonprofits for a PILOT program that is rooted in shared interests and mutual dependence for each other’s long-term success.

Many large nonprofits like hospitals and universities are quite immobile, and other smaller nonprofits may be committed to serving their local communities even if they could relocate with relative ease. The long-term success of these organizations depends on the municipality’s success. Because population loss, crime, and crumbling infrastructure can imperil a nonprofit’s future, having a local government with the capacity to provide quality public services is in its own self-interest.

Similarly, nonprofits are often major employers and provide services and activities that attract people to a city and improve the quality of life for local residents. Thus, the success of these organizations is also crucial for a municipality’s future. Even if the nonprofits are tax-exempt, their presence can significantly expand the local tax

base by attracting businesses and homeowners.

Recognition of these shared interests by both sides is crucial to reaching sustainable PILOT agreements. Private conversations between high-ranking municipal and nonprofit officials can help break down barriers that sometimes block PILOTs. To make the case for PILOTs, municipalities often appeal to the nonprofits’ sense of fairness and community responsibility—arguing that it is fair for nonprofits to pay for the cost of public services they consume, and that a contribution will directly benefit the community.

These conversations should also touch on what the nonprofits need for their future success. In practice, municipalities are often most successful in obtaining PILOTs when nonprofits need something from the local government, such as building permits or zoning changes. The *quid pro quo* nature of these agreements is often viewed negatively—as a form of extortion or special treatment. However, accommodating these requests is often in a municipality’s own interest.

For major nonprofit development projects, a shortened approval process with less red tape can cut overall costs significantly, and such discussions can result in more creative arrangements. For example, as part of a 20-year PILOT agreement with Clark University, the City of Worcester, Massachusetts agreed to work with the university to convert a short section of a street into a pedestrian area.

When local officials use more aggressive tactics to obtain PILOTs, such as trying to shame nonprofits into making payments or threatening to

City	PILOT Revenue Generated (\$)	City Budget (\$)	Year	PILOT Revenue Generated as a Share of Total Budget (%)
Baltimore, MD	5,400,000	2,935,976,521	FY2011	0.18
Boston, MA	15,685,743	2,380,000,000	FY2009	0.66
Bristol, RI	181,852	43,846,275	FY2011	0.41
Butler, PA	15,000	8,442,098	FY2010	0.18
Cambridge, MA	4,508,000	466,749,012	FY2008	0.97
Lebanon, NH	1,280,085	42,312,510	FY2010	3.03
Minneapolis, MN	158,962	1,400,000,000	FY2009	0.01
New Haven, CT	7,500,000	648,585,765	FY2010	1.16
Pittsburgh, PA	2,800,000	507,797,100	FY2011	0.55
Providence, RI	3,686,701	444,544,123	FY2010	0.83

Source: Authors’ research.

challenge their tax-exempt status in court, the organizations may become defensive and less willing to cooperate. Charitable nonprofits have a strong record of defending their property tax exemptions, so such divisive tactics are likely to leave a municipality with no PILOT, potentially significant legal fees, and a damaged reputation.

### Problems with PILOTs

PILOTs have the potential to provide crucial revenue for municipalities with large nonprofit sectors, but there are many problems with these payments compared to more conventional taxes and fees.

First, at the same time that municipalities face a fiscal crisis caused by the recession, nonprofits face their own fiscal crisis due to declining endowment values and donations. In addition, government contracts—a major funding source for health and human service nonprofits—were cut, and some government entities are delaying contracts or payments. A 2009 survey found that 80 percent of nonprofit organizations were experiencing fiscal stress in the wake of the recession (Center for Civil Society Studies 2009). To nonprofits facing uncertain financial futures, it appears unfair for local governments to begin requesting PILOTs at this time (National Council of Nonprofits 2010).

Second, some degree of horizontal and vertical inequity in PILOT programs is almost inevitable, because their voluntary nature means there is no way to ensure that nonprofits with similar property values make comparable PILOTs. For example, even with Boston's long-standing PILOT program, the four largest universities in the city made very different contributions in fiscal year 2009. Boston University paid \$4,892,138 (8.53 percent of what it would pay in property taxes if taxable); Harvard University paid \$1,996,977 (4.99 percent); Boston College paid \$293,251 (1.92 percent); and Northeastern University paid only \$30,571 (0.08 percent).

Third, PILOTs are a limited and frequently unreliable revenue source, rarely accounting for more than 1 percent of total revenues. This limited revenue potential must be weighed against some potentially significant costs associated with reaching PILOT agreements, such as upfront administrative costs, time spent by high-ranking officials negotiating agreements, or costs to obtain accurate assessments of exempt properties. PILOTs can also be an unreliable revenue source from one year to the next if they rely on short-term agreements.

Finally, the process used to reach PILOT agreements is often contentious and secretive, with contributions determined in an ad hoc manner lacking objective criteria. A collaborative approach can make PILOT requests less controversial, but reliance on private conversations also makes the process less transparent.

### Systematic Programs to Mitigate Problems

Many of these problems with PILOTs can be mitigated if municipalities set up a systematic program that does not rely solely on case-by-case negotiation, especially for municipalities with a large number of nonprofits. A framework that applies to all organizations can provide guidance and bring consistency to the negotiations with individual nonprofits. The recommendations of Boston's PILOT Task Force provide a concrete example (box 1).

Municipalities interested in establishing a systematic PILOT program should consider the following features.

***Use a threshold level of property value or annual revenues to determine which nonprofits to include in the PILOT program.***

Excluding from PILOT requests certain types of nonprofits, such as religious organizations or small social service providers, may be a popular notion, but it can result in arbitrarily targeting some nonprofits while ignoring others. A more systematic policy with a threshold approach is easy to administer and will exclude only those nonprofits that do not meet the financial threshold to make significant contributions, rather than favor some organizations based on the nature of their activities.

***Set a target for contributions that is justified.*** Instead of reaching an arbitrary dollar figure in negotiations, a target that applies to all nonprofits in the program can reduce horizontal inequities and may raise more revenue by creating the expectation for a certain contribution. For example, the target can be justified by estimating the cost of local public services that directly benefit nonprofits, such as police and fire protection and street maintenance.

***Use a basis to calculate suggested payments.*** Using a basis with the rate set to reach the target contribution will also promote consistency. The fairest basis is the assessed value of exempt property, because the PILOT request will be proportional to the tax savings each organization receives from the property tax exemption. However,

## BOX 1

## Recent Municipal Initiatives on PILOTs

**Baltimore, Maryland:** The city reached a \$20 million six-year PILOT agreement with hospitals and universities in June 2010, with \$5.4 million to be paid in each of the first two years. In return, the city dropped a proposed \$350 fee per dorm and hospital bed, and protected hospitals and universities from increases in telecommunications and energy tax rates over the next six years (Walker and Scharper 2010).

**Boston, Massachusetts:** Beginning in January 2009, a task force of representatives from nonprofits, city government, business, labor, and the community met with a goal of making the city's existing PILOT program more consistent. The final report has recommendations on key features of a systematic PILOT program: only nonprofits with property values exceeding a \$15 million threshold are included in the program; the target PILOT for each institution is equal to 25 percent of what it would pay in property taxes, because roughly one-quarter of the city's budget is devoted to core public services that benefit nonprofits; assessed value is used as a basis for the payments; and guidelines determine which types of services will count for community benefit offsets (City of Boston 2010).

**New Orleans, Louisiana:** A Tax Fairness Commission has been tasked with recommending changes to make the city's tax system fairer and to broaden the tax base. While the commission may consider PILOTs, it is particularly interested in narrowing the nonprofit property tax exemption (Nolan 2011). Louisiana has a very broad charitable exemption compared to most states, with all properties owned by eligible institutions exempt from taxation regardless of use, including those not typically tax-exempt such as fraternal organizations, labor unions, and trade associations (Bureau of Government Research 1999).

**Providence, Rhode Island:** The mayor and city council members sought to increase the amount of PILOTs from the city's four colleges and universities, but the Commission to Study Tax-Exempt Institutions (2010) recommended against renegotiating the 20-year \$48 million PILOT agreement reached in 2003. Instead the commission recommended that the city should focus on forming partnerships with local nonprofits to foster economic growth, and the state should provide full funding of its PILOT program and provide Providence with a share of new income and sales tax revenues that result from nonprofit expansion.

municipalities that want to avoid having to accurately assess tax-exempt properties can use another basis, such as the square footage of property or the organization's annual revenues.

***Include community benefit offsets, so nonprofits can reduce their target cash PILOTs in return for providing certain public services for local residents.*** Charitable nonprofits are typically more willing to provide in-kind services than to make PILOTs, and are well positioned to leverage their existing expertise and resources to provide needed services. For example, nonprofit hospitals can set up free health clinics, and universities can establish after-school tutoring programs. Local officials should be clear and consistent about which services are most needed by local residents and will count for community benefit offsets, and should rely on nonprofits to estimate the cash value of these donated in-kind services.

***Reach long-term PILOT agreements.*** Both municipalities and nonprofits are better off with a long-term approach that allows them to build predictable payments into their respective budgets. Additionally, because PILOT requests can require considerable time to negotiate, both parties will benefit from reaching an agreement and then moving on to focus on their primary missions and perhaps other partnerships to serve the community. Several municipalities have 20- or 30-year PILOT agreements in place.

### Alternatives to PILOTs

Given some of the common problems with PILOTs, municipalities with large nonprofit sectors that face revenue shortfalls may want to consider alternative revenue-raising measures.

***Increase reliance on traditional user fees or special assessments.*** This alternative may be the most palatable in the current anti-tax climate. One consideration favoring this option is that nonprofits are typically not exempt from these charges, so increasing reliance on such sources will obtain revenue from a broad group of entities, including tax-exempt nonprofits. For example, a municipality could finance garbage collection through a fee instead of the property tax, or use special assessments to pay for sewer hookups in new subdivisions.

***Establish municipal service fees.*** Some municipalities have carved out specific services that are normally funded through property taxes and instead charged nonprofits a fee for the service.

These fees may or may not be assessed solely against tax-exempt nonprofits, and they often use a basis for the payments related to the size of the property rather than the assessed value. For example, Rochester, New York, has a local works charge to fund snowplowing and street repair. It is applied to both taxable and tax-exempt organizations using the property's street frontage as the basis. Minneapolis, Minnesota, has a street maintenance fee that also uses square footage as the basis, but is only charged to nongovernmental tax-exempt properties.

#### ***Develop agreements for needed services.***

Local officials can decide not to pursue cash PILOTs, but instead develop formal partnerships with nonprofits to provide specific services for local residents or work together to foster economic development. Direct provision of needed services, sometimes known as services in lieu of taxes or SILOTs, will help the fiscal situation of the municipality in the short run, while joint efforts to foster economic development can have significant long-run benefits.

#### ***Expand the tax options for municipalities.***

This final alternative would require a change in state law in many instances. Some municipalities across the country have the ability to levy sales taxes, special excise taxes such as hotel taxes, income taxes, or payroll taxes. But most cities in the Northeast do not have these alternative tax sources, and are especially reliant on the property tax, which can be problematic if the tax-exempt sector is large or growing rapidly.

### **Conclusion**

PILOTs have the potential to provide crucial revenue for municipalities that have a significant share of total property value owned by tax-exempt nonprofits, both as a stop-gap in the current municipal fiscal crisis and in the future. However, PILOTs rarely account for more than 1 or 2 percent of municipal revenues, so expecting these payments to eliminate local government deficits is unrealistic. Furthermore, singling out nonprofits to help address a municipal fiscal crisis is unfair since they face their own challenges due to the recent recession.

Local officials who do want to pursue PILOT agreements must tread carefully if they want to avoid some common pitfalls. First, PILOT requests can be highly contentious when local officials resort to heavy-handed pressure tactics to reach agreements. It is preferable for local officials to work collaboratively with nonprofit leaders to craft

PILOT agreements that serve their mutual interests. Second, the voluntary nature of PILOTs limits the revenue potential of these agreements, results in inconsistent treatment of nonprofits, and leads to other problems. Municipalities with a large number of nonprofits can mitigate these problems by establishing a systematic PILOT program to provide guidance and bring consistency to their negotiations with individual nonprofits. **L**

#### **▶ ABOUT THE AUTHORS**

**DAPHNE A. KENYON** is a visiting fellow in the Lincoln Institute's Department of Valuation and Taxation and principal of D. A. Kenyon & Associates, Windham, New Hampshire. Contact: [dkenyon@lincolninst.edu](mailto:dkenyon@lincolninst.edu)

**ADAM H. LANGLEY** is a research analyst in the Lincoln Institute's Department of Valuation and Taxation and a master's student in economics at Boston University. Contact: [alangley@lincolninst.edu](mailto:alangley@lincolninst.edu)

#### **▶ REFERENCES**

- Bureau of Government Research. 1999. *Property tax exemption and assessment administration in Orleans parish*. New Orleans, LA.
- Center for Civil Society Studies. 2009. *Impact of the 2007-09 Economic Recession on Nonprofit Organizations*. Communiqué No. 14. Baltimore, MD: Johns Hopkins University for Policy Studies. June 29.
- City of Boston. 2010. *Mayor's PILOT task force: Final report and recommendations*. December.
- Commission to Study Tax-Exempt Institutions. 2010. *A call to build the capital city partnership for economic growth: Report to the Providence City Council from the Commission to Study Tax-Exempt Institutions*. Providence, RI. November.
- Hoene, Christopher W. 2009. *City budget shortfalls and responses: projections for 2010-2012*. Washington, DC: National League of Cities.
- Hoene, Christopher W. and Michael A. Pagano. 2010. *Research brief: City fiscal conditions in 2010*. Washington, DC: National League of Cities.
- Kenyon, Daphne A. and Adam H. Langley. 2010. *Payments in lieu of taxes: Balancing municipal and nonprofit interests*. Cambridge, MA: Lincoln Institute of Land Policy.
- Lipman, Hary. 2006. The value of a tax break. *The Chronicle of Philanthropy* 19(4): 13.
- McArdle, Regina, and Donna Demirai. 2004. A study of charitable and educational property tax exemptions. *City and Town*, January. Boston: Massachusetts Department of Revenue, Division of Local Services.
- McFarland, Christiana. 2010. *State of America's cities survey on jobs and the economy*. Washington, DC: National League of Cities.
- National Council of Nonprofits. 2010. *State budget crises: Ripping the safety net held by nonprofits*. Washington DC. March 16.
- Nolan, Bruce. 2011. N.O. Tax Fairness Commission begins rethinking property taxes. *The Times-Picayune*. February 3.
- Walker, Andrea K., and Julie Scharper. 2010. Baltimore City Council committee backs \$15 million in new taxes; deal with hospitals and universities announced for \$20 million more. *Baltimore Sun*. June 10.

# Betterment Levy in Colombia

## Relevance, Procedures, and Social Acceptability



Courtesy of Oscar Borrero Ochoa

### Architectural rendering of the renovation of Alfonso López Plaza in Manizales

Oscar Borrero Ochoa

The betterment levy or special assessment (as it is known in the United States) is a “compulsory charge imposed by a government on the owners of a selected group of properties to defray, in whole or in part, the cost of a specific improvement or services that is presumed to be of general benefit to the public and of special benefit to the owners of such properties” (IAAO 1997, 10–11). In Colombia this levy, called *Contribución de Valorización* (CV), has been collected since 1921.

The betterment levy is addressed in the legislation of most Latin American countries, although its implementation often meets resistance. The main arguments against it claim it is impractical, technically cumbersome, beyond local capacity to implement, and unpopular. Colombia’s experience, however, seems to contradict these allegations, suggesting that the resistance is grounded more

on prejudice, ideology, or lack of information. This instrument not only has a long history of continued (albeit irregular) application, but also a record of raising substantive revenues to fund public works.

Bogotá currently has about \$1 billion worth of investment in public works from this levy, and eight other smaller cities combined have another \$1 billion. More importantly, based on recent levies on 1.5 million properties in Bogotá, its collection has been generally accepted by taxpayers with relatively low default rates—in fact lower than for the property tax. Although its legitimacy is not questioned, even among the business community, controversies continue over how the charge is assessed and distributed among properties. This raises an interesting question: Why, in spite of its technical shortcomings, is the betterment levy well-accepted by society at large?

In spite of its relevance, there is very little literature available about this instrument in Colombia and in the rest of Latin America (Fernandes 1981;

Bustamante 1996; Manon and Macon 1977). To fill this gap, my colleagues and I carried out a study of the methods used to assess the levy in Bogotá and Manizales—two cities that exemplify different assessment models used in Colombia (Borrero et al. 2011). This article summarizes the main findings of the study and, we hope, may be useful to other cities interested in applying betterment levies to finance urban development.

In Colombia the betterment levy has played a significant role in financing public works and has been a major contributor to municipal revenues, although collections have fluctuated over time. In the late 1960s, they accounted for 16 percent of total revenues in Bogotá and 45 percent of revenues in Medellín. In the beginning of the 1980s, the levy accounted for 30 percent of revenues in Cali, and in 1993 it represented 24 percent of revenues in Bogotá. Since 2000, the levy has been used more intensively in Bogotá, Medellín, Cali, Manizales, Bucaramanga, Barranquilla, and most other cities with a population of more than 300,000.

We chose to study Bogotá and Manizales because these cities have used this instrument during the past 20 years to finance many roads and urban services. Each city developed its own distinct methodology, and has had ample experience advising other cities. For instance, Cali and Barranquilla have started collecting the levy for road construction using the Bogotá model, while Bucaramanga and Pereira have followed the Manizales model (also known as the Medellín model). Both approaches are legal in Colombia, but the methodology and focus used to allocate the levy are very different.

Colombian law stipulates three parameters used to calculate the betterment levy: (1) the cost of the construction project; (2) the value added to properties that can be attributed to the project; and (3) the affordability of the levy (i.e., the capacity of the property owners to pay). Law Decree 1604 of 1966 states that the upper bound of the levy is the lowest value among these parameters. For example, in Manizales one of the projects had small values added that were considerably less than the project cost; yet the levy was assessed based on the value added. The only city that does not comply with this norm is Bogotá, where the levy equals the cost of the project.

The Bogotá model uses a series of factors to represent the local benefit of the project in order to assess the levy, taking into account the payment

capacity of the property owners and the different benefit levels. These factors include considerations such as improved mobility and welfare, but do not quantify the specific value added to the property by the project. On the other hand, the Medellín model applied in Manizales calculates the value added to the property by the project using a dual appraisal method, and then distributes the levy among the property owners by taking into account their capacity to pay. Thus, the Bogotá model is similar to a general tax to finance public works, while the Medellín model is closer to the concept of value capture contribution to fund public works (Act 388 of 1997, Article 87; Doebele 1998).

### **The Experience of Bogotá**

Bogotá, the capital of Colombia, is a city of 7.5 million people with an area of 1,587 square kilometers (613 square miles) on a flat savannah of the Andes mountain range. The administration of the betterment levy is the responsibility of the Urban Development Institute (*Instituto de Desarrollo Urbano*, or IDU), which is also in charge of identifying the main road construction projects to be financed by the levy. The levy is assessed on all properties affected by a given project (or set of projects) and is calculated by multiplying different benefit factors. Examples of recent projects with considerable revenues from the levy are shown in table 1.

### **Area of Influence**

In order to collect a betterment levy, the IDU defines the area of influence, that is, the area where the road construction project will provide benefits. The criteria used to establish the areas of influence and the level of benefit include proximity and accessibility to the project—which affords greater use of the road and thus increases property values—as measured by the project impact on the assessed value and the economic conditions of the real estate properties in the area.

To reduce the average amount of the levy, an effort is made to include the largest possible number of lots within the area of influence. When the levy finances multiple projects, the boundaries of the entire area of influence are defined by superimposing the individual areas of each project and adjusting them to account for the complementary effects of the benefits from the combined set of projects (Borrero et al. 2011, 22).

**TABLE 1**  
**Betterment Levy Collections in Bogotá**

Projects	Approval Date	Collection Date	Amount Collected (US\$ million) <sup>1</sup>
General Betterment	1993	1993	106.2
Build the City ( <i>Formar Ciudad</i> ) Phase 1	1995	1996–1998	351.9
Build the City ( <i>Formar Ciudad</i> ) Phase 2	2001	2002	55.9
Agreement 180 Local Betterment Phase 1	2005	2007–2010	260.2
Local Betterment Phase 2	2005	2009	265.7
Local Betterment Phase 3	2005	2012	262.1 <sup>2</sup>
Local Betterment Phase 4	2005	2015	85.5 <sup>2</sup>

1 Colombian pesos converted at the 2009 average exchange rate US\$1 = 2,000 pesos.

2 Expected amount to be collected.

Source: Urban Development Institute ([http://www.idu.gov.co/web/guest/valorizacion\\_ac\\_recaudo](http://www.idu.gov.co/web/guest/valorizacion_ac_recaudo)).

**TABLE 2**  
**Recent Projects in Manizales Financed with Betterment Levies**

Total amount assessed	US\$24.6 million <sup>1</sup>
Number of lots	69,466
Number of payments in advance	52,089 (75 percent of the total)
Total expected revenue	US\$21.9 million
Actual amount collected	US\$17.2 million (79 percent of the amount expected)

1 Colombian pesos converted at the 2011 average exchange rate US\$1 = 1,900 pesos.

Source: Instituto de Valorización de Manizales (INVAMA, [www.invama.gov.co](http://www.invama.gov.co)).

### Measuring Project Benefits

The benefits resulting from the project or set of projects are calculated by city zone, taking into account benefit factors defined for each project. Using the example of a recent road project, the benefit factors are: (1) greater mobility, which translates into greater transit speeds, lower transit time, lower operating costs, and higher quality of life; (2) general urban planning benefits as the project normalizes the road network and rationalizes the use of public space; (3) changes generated in land use and stimulation of productive and commercial activities; (4) greater market value of nearby real estate properties; (5) integration of the project into the urban structure of the city; (6) optimization of circulation and mobility; and (7) recovery of deteriorated or depressed areas (Borrero et al. 2011, 84).

Once the benefits of the project are defined and its cost estimated, the distribution of the levy

takes into account additional factors: the type of land use, density, degree of benefit allocated to each lot, and the payment capacity of the property owners as measured by household quality of life surveys. The Bogotá model is criticized primarily because the calculation of the project benefit does not measure the value added to the properties directly, but instead relies mostly on these indirect indicators.

### The Experience of Manizales

Manizales is a city of 400,000 people located west of Bogotá, at the center of the coffee producing region. Its topography is mountainous, which implies high engineering costs. The city has extensive experience with road development and urban renewal financed with betterment levies, but it uses a different methodology from that in Bogotá and it requires a more detailed description. The institution that administers the levy with full authority delegated by the city legislature is the *Instituto de Valorización de Manizales* (INVAMA).

Over the past three years, Manizales has financed four major road and urban development projects with the levy: renewal of the Alfonso López Plaza; paving of Alférez Real road; renovation of Paseo de los Estudiantes; and development of the Eastern Area road network. All of these projects were funded by a single levy assessed on 80 percent of the city’s properties, and collections amounted to US\$24.6 million (table 2).

### Measuring Project Benefits

Manizales applies the dual appraisal method to measure benefits—a methodology used for many years in Medellín, Bucaramanga, and other cities. This method identifies cadastre valuations for real estate properties in a second area comparable in its characteristics to the area affected by the designated projects. The assumption is that land values will behave similarly in both areas. Experts make an initial appraisal of a sample of properties in the area of influence of the proposed project to determine the present market values. To estimate the land values after the project is finished, they appraise the market values in the comparison area.

This method is based on information about the increase in value or benefit generated by previous infrastructure projects, referred to as ex-post evaluation. The City of Manizales initiated an ex-post analysis of the projects executed in past years to



Courtesy of Oscar Borrero Ochoa

**Public works improvements and road construction near Palogrande Stadium in Manizales.**

examine the value added to the land, but few other cities that collect betterment levies have done so.

The initial appraisal is intended to create a map of land prices (isoprices map) before construction, and the second appraisal determines the added value hypothetically generated by the new infrastructure project in the area. The lot or area where the “maximum added value” occurs (known as the “focal point”) is analyzed in detail to calculate the maximum percentage increase in value.

***Critical Steps in the Dual Appraisal Method***

1. *Define the area of influence.* This area is based on the improved mobility enabled by the road or infrastructure project, and its definition is similar to that used in Bogotá.

2. *Calculate the benefit and generate an isoprices map based on a sample of properties.* The criteria to measure distances and road networks are established within an initial zone defined as broadly as possible. A sample of lots is taken, representing the predominant, nonspecific features of the properties in the zone. Information collected on this sample is

used to generate a map of land values before the project is constructed. The sample size is calculated statistically. For medium-size cities experts appraise between 100 and 200 properties, depending on the size of the area of influence and its heterogeneity. A second map of isoprices is then developed with the new expected property values, and a third map plots the differences in isoprices between the first and second map. This third map is used to distribute the betterment levy.

3. *Estimate the benefit.* To determine the added value or benefit accruing to a lot, an interdisciplinary team of experienced professionals carries out several studies: an economic study to define the mathematical formulas that qualify the parameters for the value-added criteria; a road network study to qualify and quantify the benefit, measured as a reduction in travel distance for the population in the affected neighborhoods; an urban study to measure the potential for different land uses in the area; and a real estate study to compare and quantify the level of benefit in specific areas.

4. *Allocate the benefit.* Each of the following factors is given a weight (shown in parenthesis):

**TABLE 3**  
**Perceptions of INVAMA’s Role in Managing Public Works Projects Financed by Betterment Levies in Manizales**

	Eastern Area		Alfonso López Plaza	
	Yes (%)	No (%)	Yes (%)	No (%)
Do you think that the project for which you paid, or are paying, a betterment levy, has given you, or will give you, a benefit?	94.7	5.3	94.3	5.7
Do you think that the value you paid or are paying for the levy was, or is, adequate?	83.0	17.0	83.7	16.4
Do you think that the projects executed by INVAMA have contributed to the city’s development?	98.9	1.1	99.2	0.8
Do you think that the betterment levy system is a valid tool to implement public works?	95.0	5.0	95.1	4.9
Are you completely satisfied with the projects being built, and those already executed by INVAMA?	97.8	2.2	97.8	2.2
How would you qualify the job of INVAMA as a manager of public works projects using the betterment levy system?	Eastern Area		Alfonso López Plaza	
Excellent (%)	42.1		28.9	
Good (%)	49.4		64.3	
Fair (%)	5.3		4.1	
Bad (%)	0.8		0.3	
Don’t know/Don’t answer (%)	2.0		2.5	
Sample Size	359 people		367 people	

Source: Borrero et al. (2010, chapter 4).

potential change of use, which generates the most added value even though it affects a small number of lots (40 percent); improved access to higher value areas or commercial areas (20 percent); savings in commuting time is measured by reduction of travel time in the city, clearly determining times and distances (20 percent); and reduction in pollution or traffic congestion at specific areas where these problems occur (20 percent).

5. *Establish the level of benefit (focal point).* As mentioned above, the area of highest betterment in the entire area of influence, known as the focal point, is the lot or area that benefits most from the project, because of the confluence of the most important value-added factors. The expected added value is then calculated for this lot and the corresponding percentage is multiplied by the initial market value of lot. With these values, one builds the added value or isopricing map for the entire area expected to benefit from the project once it is finished. Ex-post studies performed in several cities found that road projects generate on average an actual added land value of 10 to 15 percent within three years following project completion. Assuming 15 percent

incremental value for the lot with the highest benefit, it follows that a lot with 70 percent benefit has an expected added value of 10.5 percent.

6. *Distribute the levy.* Once the cost of the project has been defined and its value-added impact has been calculated, INVAMA proceeds to distribute the levy within the area of influence using models appropriate to the project. Manizales uses benefit factors to distribute the levy, as do most cities in Colombia. The method is based on defining a “virtual area” obtained by multiplying weighted factors given to property characteristics by the level of benefit and the physical area of the lot. Criteria to define benefit factors for distribution purposes may vary, but the point of reference is the total value of the property based on area of the lot plus construction (Borrero et al. 2011, annex 2).

7. *Determine affordability.* The levy is assessed by taking into account the capacity to pay of the contributors, and therefore it may be allocated differently depending on their socioeconomic level. Affordability is based on data from household income and expenditure surveys. Sometimes a comparative analysis is made between the betterment

levy and other charges, e.g. the relationship between the levy and the utilities paid by the property owner, or the relation between the levy and the property tax.

8. *Set the collection period.* In Manizales, Medellín and Bucaramanga, the collection period generally coincides with project execution. Other cities have tried different approaches. In Cali, the most recent betterment levy collection started before construction, but will extend for a long time following project completion. Cities normally collect one betterment levy in each mayoral term (4 years), but recent projects in Bogotá and Cali have longer collection periods, extending over several terms.

The legal maximum collection term is five years following project completion, but the most successful experiences are completed in two years. Longer-term collections are more difficult and pose the risk of the municipality running into cash flow problems to finish the project. The betterment levy can be collected as early as two years before the initiation of construction, but that requires very efficient cost estimates and expedient project execution. In Bogotá, a recent experience in collecting the levy two years in advance of the construction start date generated controversy because the project started late and has progressed slowly. To avoid this problem, the proposed new Bogotá Betterment Statute stipulates that the levy shall be collected concomitantly with project execution.

### ***Perceived Legitimacy***

The betterment levy has a lot of support among city residents and property owners in Manizales, as shown by high levels of satisfaction in a recent survey (table 3). The levy was collected before the projects began and 80 percent of the payments were made in the first year of collections. This survey, taken after project completion, captures the perceptions of citizens regarding the way INVAMA managed two recent projects. Specifically, the results demonstrate a clear link between the benefit and the willingness to pay the levy—a higher compliance level than that of the property tax, even though the levy is higher than the tax. This finding contradicts the common belief that Latin American taxpayers have a culture of nonpayment. It also attests to the high level of legitimacy among the citizens and the good governance of the municipality's management of the betterment levy.

### **Concluding Remarks**

Colombia's experience with the betterment levy during the past 70 years demonstrates that it is a viable instrument to finance urban development and is capable of raising substantial revenues, even though the methodology to assess and distribute the levy is complex and can be perfected. Among the lessons to draw from that experience, the most important is the clear link between the provision of public benefits and the property owners' willingness to pay the levy. Success depends on the legitimacy of the project and the institutional capacity and ethical standards of the agency administering the levy. To generate trust among citizens, success is also predicated on ensuring affordability, applying a fair distribution model, publicizing the social value of the project, and promoting participation during implementation. **I**

#### **▶ ABOUT THE AUTHOR**

**OSCAR BORRERO OCHOA** is an economist, a certified appraiser, and a private consultant on property markets, real estate development projects, and management. He has been president of Camacol, the Colombian organization of the building industry, and Fedelonjas, the Colombian organization of property appraisers. He is a lecturer on urban economics at the University of Los Andes and the National University of Colombia, Bogotá, and is a frequent speaker in Lincoln Institute courses. Contact: [oscarborrero@cable.net](mailto:oscarborrero@cable.net)

#### **▶ ACKNOWLEDGMENTS**

The author thanks his colleagues Esperanza Durán, Jorge Hernández, and Magda Montaña who were key contributors to the Lincoln Institute working paper and related research on which this article is based.

#### **▶ REFERENCES**

- Borrero Ochoa, Oscar, Esperanza Durán, Jorge Hernández, and Magda Montaña. 2011. Evaluating the practice of betterment levies in Colombia: The experience of Bogotá and Manizales. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.
- Bustamante Ledesma, Francisco Dario. 1996. *Manual de contribución de valorización*. Medellín: Ed. Teoría del Color Litografía.
- Doebele, William A. 1998. The recovery of 'socially created' land values in Colombia. *Land Lines* 10(4).
- Fernández Cadavid, Alberto. 1981. *La contribución de valorización en Colombia*, 2nd edition. Bogotá: Editorial Temis.
- IAAO (International Association of Assessing Officers). 1997. *Glossary for property appraisal and assessment*. Chicago, IL: IAAO.
- Manon, Jorge, and Jose Merino Macon. 1977. *Financing urban and rural development through betterment levies: The Latin America experience*. Westport, CT: Praeger Publishers, Inc.



*Weidong Qu is a research fellow at the Peking University–Lincoln Institute Center for Urban Development and Land Policy in Beijing, and an associate professor in the Department of Land and Real Estate Management at Renmin University of China. Dr. Qu's research interests include real estate appraisal, land and cadastral management, fuzzy cluster analysis, GIS programming and analysis for real estate valuation, and real estate investment analysis and finance.*

*Since 2003, he has focused much of his research on property tax reform in China. Dr. Qu has authored five academic books and published over twenty papers for both international and domestic Chinese journals and conferences. He earned his Ph.D. in real estate appraisal at the Geodetic Institute of the University of Hannover, Germany, in 2000.*

*Dr. Qu also serves as director of the China Association of Real Estate Academicians and executive secretary general of the Global Chinese Real Estate Congress. He is also conducting research in Munich on real estate mortgage valuation and risk analysis as a Humboldtianer fellow of Germany's Alexander von Humboldt Foundation, and taking part in a research project on property tax reform in Germany. Contact: quweidong@mparuc.edu.cn*

## Weidong Qu

**LAND LINES:** *How did you become associated with the Lincoln Institute of Land Policy?*

**WEIDONG QU:** After returning to China in 2002 following my studies in Germany, I took part in a training seminar on urbanization and smart growth that was cohosted by the Lincoln Institute and Renmin University. Then, in December 2003, I was invited by officials in the City of Shenzhen to participate in an international symposium on property taxation organized by China's State Administration of Taxation and the Lincoln Institute. At a later conference on property taxation in Beijing in 2007, I met Joyce Yanyun Man, the director of the Institute's China Program and the Peking University–Lincoln Institute Center for Urban Development and Land Policy, and she invited me to join the Center's research group to lead the property tax team.

**LAND LINES:** *Why is research on property taxation in China so important?*

**WEIDONG QU:** China's real estate market has developed rapidly over the past 30 years as economic reforms have been introduced. At the same time, real estate–related taxes remain relatively complicated, with a lack of distinction between taxes and fees, and widespread use of administrative fees in place of taxes that may not otherwise have been approved by central regulatory authorities. The steady increase in the use of taxes and fees has begun to influence development costs in the residential housing sector; with the combined charges estimated to account for 40 percent of total costs for new housing stock. This situation is a growing source of criticism from both property developers and residents, who see this increase in charges as one of the factors pushing China's urban housing prices ever higher.

Another tax-related issue confronting the sustainable growth of China's real estate sector is the preference for levying taxes and fees on the developer rather than the ultimate owner. To date, China has not established a property tax system, and taxes and fees levied on property owners remain comparatively low, which has contributed to overinvestment and speculation in the property market.

In addition, due to China's centralized tax system and the lack of a stable local revenue source such as a property tax, local governments have become heavily dependent on revenues from land transfer fees to fund public expenditures and infrastructure investments. According to China's Ministry of Land and Resources, during the 11th Five-year Plan (2006–2010), more than 33 million *mu* (more than 200 million acres) of land was transferred by local governments for development, generating revenues of 7 trillion *renminbi* (approximately US\$1.1 trillion). This land-based approach to public finance undermines economic stability and puts pressure on land prices, with the potential to contribute to a real estate bubble.

**LAND LINES:** *What challenges differentiate property tax issues in China from the experience in the United States, Europe, or other developed economies?*

**WEIDONG QU:** Property tax levies in developed countries are generally based on an assessed value, and most jurisdictions utilize computer-assisted mass appraisal (CAMA) systems to administer their property taxes. At this time, however, none of the taxes or fees levied on China's real estate sector are based on an assessed value and, consequently, there is a critical shortage of experienced assessors and officials. Most current assessors focus primarily on individual properties, and they lack experience with mass appraisal techniques.

Administering a modern property tax also requires an integrated geographic and property database. My research indicates that more than 90 percent of China's cities do not yet have such a property database, and many local governments cannot document the number of parcels within their jurisdictions, or even the ownership of each parcel.

**LAND LINES:** *How does property taxation in China relate to the country's rapid urban development and growth?*

**WEIDONG QU:** According to a projection from the Chinese Academy of Social Sciences, China's rate of urbanization will be 52.28 percent in 2015, 57.67 percent in 2020, and 67.81 percent in 2030, after which the rate is expected to stabilize. This trend will produce a rapid increase in the urban population and the need for significant expansion of basic infrastructure,

such as schools and hospitals, as well as more residential housing. Supplying land for this new infrastructure will be an ongoing challenge and will eventually render China's current land-based public financing approach unsustainable.

**LAND LINES:** *How do you approach property taxation in China through your own research?*

**WEIDONG QU:** The first official mention of property tax reform came in a report from the third plenary session of the 16th Central Committee of the Chinese Communist Party in 2003. That report directed the government to "reform city and village construction taxes and fees, and levy a property tax on fixed assets when the conditions are ready, including the concomitant cancelation of overlapping taxes." This statement was one of the major impetuses for the Lincoln Institute to become involved with property tax research in China and to collaborate with the State Administration of Taxation in Shenzhen, as well as the beginning of my own work in the area.

With the central government's support, policy makers selected six Chinese cities to serve as initial property tax reform pilot cities for internal sample valuations and research. The study was later expanded to ten cities, including Beijing. These pilots have built upon China's ongoing stamp tax reform, which refers to a value-based tax paid during the sale of a property and has been invaluable in pushing jurisdictions to formulate their own assessment standards. According to the Ministry of Finance, China will transition to an assessed-value standard for the stamp tax by 2012, which will require each jurisdiction to develop its own computer-assisted mass appraisal system.

In my opinion, four key issues merit research attention. First, it is important to define what we mean in China by a property tax, because considerable disagreement exists among policy makers and scholars about what such a tax should include. Second, property databases remain incomplete or inaccurate, so it is vital to conduct a national-scale survey of housing stock and ownership. Without

this data, government agencies are unable to assess property values for all parcels within their jurisdictions or ensure that property tax bills are mailed to the correct property owner.

Third, further research into mass appraisal theories and techniques is still needed. Although China's tax officials have made progress in their knowledge of the basic principles of mass appraisal, they generally lack specialized real estate training, and their limited understanding threatens to lead to ill-informed policy making. Fourth, before any progress can be made, it is necessary to overcome opposition from China's political and economic elites, who often own multiple properties and have emerged as one of the biggest obstacles to property tax reforms. Given the uncertainty as to the final direction of property tax reform in China, these interest groups have seen delaying the imposition of a property tax as their best strategy.

**LAND LINES:** *What challenges has the PKU-Lincoln Center's property tax demonstration project sought to address?*

**WEIDONG QU:** Since property tax reform in China was first mentioned in 2003, the Lincoln Institute has contributed to this important issue by hosting training seminars and international conferences on property tax assessment and theory, along with lessons from other international experiences. The property tax demonstration project represents the logical next step in the Institute's work, with a goal of identifying and addressing the practical challenges of such reform. Many of these challenges, such as the importance of cross-ministerial information sharing and CAMA valuation codes, are not the high-profile issues focused on by officials, but they are equally important in ensuring the success of any property tax reform.

Specifically, the demonstration project has focused on 18 properties on Financial Street in western Beijing, the location of the People's Bank of China and the headquarters of a number of other major domestic and international financial companies. We chose Financial Street because

it is one of the most developed districts in Beijing; however, even in such a modern area it took us several months to collect all of the geographic, property, and tenant information needed. This underscores the importance of constructing standards for data gathering and information sharing among government agencies.

**LAND LINES:** *What are the biggest remaining obstacles to implementing an effective residential or commercial property tax in China?*

**WEIDONG QU:** Assessing a property tax on residential housing stock and on commercial real estate are two separate issues in China. As mentioned, many factors hinder the implementation of a property tax on residential housing stock, including the opposition of powerful interest groups and the current lack of reliable property transaction and ownership data. As in most countries, citizens' historic opposition to paying taxes on owner-occupied property is also a challenge.

In terms of a property tax on commercial real estate, the current consensus is to leave the existing tax burden unchanged by eliminating the present land use fee and the rental-income and original-value-based real estate taxes levied on commercial property and then establishing a single assessed-value property tax. This approach should not generate the same opposition as that seen against a residential property tax.

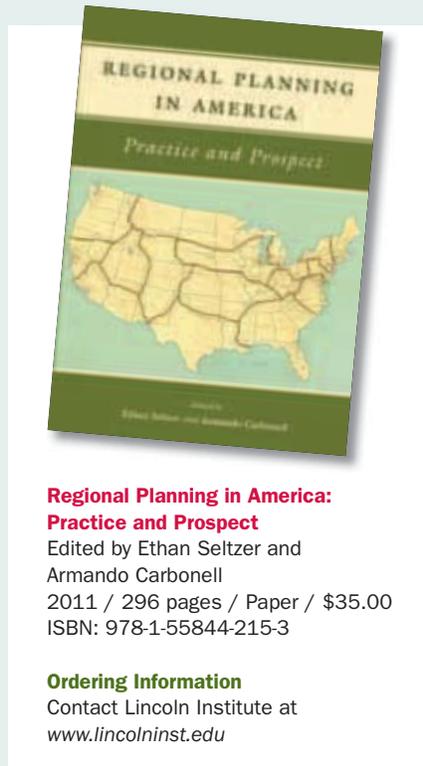
In my view, there are two key challenges remaining. The first is to revise China's existing laws related to taxes on property and then to draft new legislation. The second challenge is the current variety of commercial real estate and the lack of consensus on what valuation method should be used for each type. The demonstration project conducted by the PKU-Lincoln Center in 2009 focused exclusively on top-grade commercial real estate, such as office space, hotels, and apartments. There remains a need for further research on the best valuation methods for property such as gas stations, hospitals, shopping centers, and informal shops in China. 

## Regional Planning in America: Practice and Prospect

We live in regions—territories defined primarily by function and only rarely by jurisdiction. The places where we work, live, shop, recreate, and socialize constitute a territory that seldom corresponds to a single town or city. Regional planning is concerned less with the exercise of jurisdiction and more with the search for new forms of habitation based on a clear commitment to advancing sustainability. Editors Ethan Seltzer and Armando Carbonell invited the other chapter contributors to assist a new generation of planning practitioners in understanding the roots and applications of regional planning in America today, and the prospects for its practice in the future.

Three central themes can be distilled from the work presented in *Regional Planning in America*. First is the critical task of *defining the region*—the initial necessity for all regional planning practice to establish an often complex set of overlapping attributes and concerns. Next comes *organizing the region*, because regional planners must go beyond being generalists with a specialty and become more like community organizers with a specialty. The third theme, *sustaining the region*, is accomplished by responding directly to the institutional challenges of sponsoring and acting on regional plans at multiple levels of government and through effective governance.

Regional planning, seen as both art and science, is probably best viewed as craft that is honed and understood through practice and reflection. The chapters suggest that future generations of regional planners will need to be able to understand local issues in a regional and global context; adept at defining planning regions based on functional planning problems; capable of reaching across boundaries to assess, identify, and act on common cause; and able to navigate the currents of power and create the lasting relationships and institutions that are needed to perform and implement plans.



The editors call for a “region ethic” that will advance the sustainability of the regions on which our existence will depend. As with Aldo Leopold’s land ethic, the region ethic is a call to recognize the central interdependencies that make our inhabitation of cities and landscapes possible. We are optimistic about the future role for regional planning in the United States and expect to see more, not less, regional activity in the coming decades. Helping U.S. regional planning to evolve will reward the best efforts of planning practitioners, educators, and researchers. Making the region ethic a tool for practice is, perhaps, the first step.

The state of our world and the realities of contemporary daily life make the case for robust regional planning. With regional planning practice in the United States settling into a new century, and the challenges that face communities and institutions requiring boundary-crossing collaboration like never before, it is time to assess what

we know about regional planning practice in anticipation of an approaching new era of conscious regionalism. This book will be of value to planners, decision makers, and citizens confronting the need to plan regionally, but looking for guidance and inspiration for making that happen.

### Contents

1. Planning Regions, *Ethan Seltzer and Armando Carbonell*
2. Plan with Nature: The Legacy of Ian McHarg, *Frederick Steiner*
3. A Region of One’s Own, *Kathryn A. Foster*
4. Planning for Equity, Fighting for Justice: Planners, Organizers, and the Struggle for Metropolitan Inclusion, *Manuel Pastor and Chris Benner*
5. Regional Planning on the Frontier, *Deborah E. Popper and Frank J. Popper*
6. Green Regions, Green Regionalism, *Timothy Beatley*
7. Regional Planning for Sustainability and Hegemony of Metropolitan Regionalism, *Gerrit-Jan Knaap and Rebecca Lewis*
8. Engaging the Public and Communicating Successfully in Regional Planning, *John Fregonese and C. J. Gabbe*
9. Moving Forward: The Promise of Megaregions and High-Speed Rail, *Robert D. Yaro*
10. Regional Practice, Regional Prospect, *Ethan Seltzer and Armando Carbonell*

### ABOUT THE EDITORS

**Ethan Seltzer** is professor in the Toulon School of Urban Studies and Planning, College of Urban and Public Affairs, at Portland State University in Portland, Oregon. Contact: [seltzere@pdx.edu](mailto:seltzere@pdx.edu)

**Armando Carbonell** is senior fellow and chair of the Department of Planning and Urban Form at the Lincoln Institute of Land Policy. Contact: [acarbonell@lincolninst.edu](mailto:acarbonell@lincolninst.edu)

## Climate Change and Land Policies

Developing policies that will keep climate change in check has become a global priority, as increasing greenhouse gas emissions contribute to extreme weather patterns. If these emissions remain unabated, changes in global temperatures, sea level rise, and other environmental impacts will have huge implications for human settlements and economic activities.

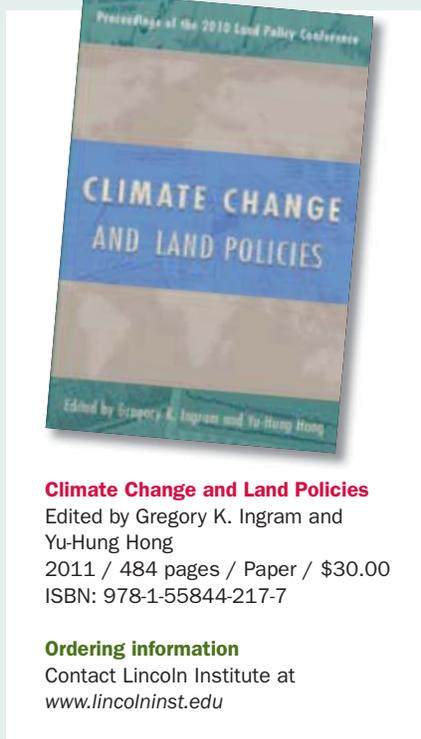
The 2010 annual Land Policy Conference provided a forum for international scholars and policy makers to discuss topics including how energy and climate change policies affect land resource allocation and land use planning; relationships among urban form, transportation, and CO<sub>2</sub> emissions; market-based approaches to environmental conservation; and the ability of governments at all levels to deal with climate change and land management.

The chapters and commentaries in this book summarize the presentations and discussions at the meeting. Five key insights on the relationships between land policies and climate change can be drawn from them. First, predicting climate change impacts in general, and the effects on land use in particular, is fraught with uncertainty and complications. Second, renewable energy policy is bound to affect land use. Third, in designing urban form and transportation policy to reduce automobile use and fuel consumption, population density is not the only factor to consider. Fourth, payment for environmental services seems to be a promising approach, yet its success will depend on transaction costs of valuing the services, negotiation, and enforcement. Finally, the environmental initiatives of different countries, international aid agencies, and global environmental interest groups need to be better coordinated to achieve the desired outcomes of collective climate change policy. Strong leadership is most critical.

### Contents

#### Introduction

1. Land Policies in the Face of Climate Change, *Gregory K. Ingram, Yu-Hung Hong*



#### Climate Change and Land Policies

Edited by Gregory K. Ingram and Yu-Hung Hong  
2011 / 484 pages / Paper / \$30.00  
ISBN: 978-1-55844-217-7

#### Ordering information

Contact Lincoln Institute at  
[www.lincolninstitute.edu](http://www.lincolninstitute.edu)

#### Climate Change and Risk Assessment

2. Preparing for Rising Water Along U.S. Coastlines, *Bruce Babbitt*
3. Sea-Level Rise and Coastal Zone Management, *Robert J. Nicholls*
4. The Impact of Climate Change on Land, *Robert Mendelsohn*

#### Climate Change Policies and Land Use

5. Alternative Energy Sources and Land Use, *Clinton J. Andrews, Lisa Dewey-Mattia, Judd M. Schechtman, Mathias Mayr*
6. Integrating Adaptation and Mitigation in Local Climate Change Planning, *Elisabeth M. Hamin*

#### Urban Form, Transportation, and Emissions

7. Land Use and Vehicle Miles of Travel in the Climate Change Debate: Getting Smarter Than Your Average Bear, *Marlon G. Boarnet, Douglas Houston, Gavin Ferguson, Steven Spears*

8. The Decline in Transit-Sustaining Densities in U.S. Cities, 1910–2000, *Shlomo Angel, Alejandro Blei, Jason Parent, and Daniel A. Civco*
9. Prediction of Transportation Outcomes for LEED-ND Pilot Projects, *Reid Ewing, Colin Quinn-Hurst, Lauren Brown, Meghan Bogaerts, Lawrence Frank, Michael Greenwald, and Ming Zhang*
10. Congestion Pricing: An Overview of Experience and Impacts, *Kiran Bhatt*

#### Market Approaches to Environmental Conservation

11. Changing Land Uses in Forestry and Agriculture Through Payments for Environmental Services, *Sven Wunder, Jan Börner*
12. Capturing Economic Rents to Pay for Conservation of Sensitive Sites, *John A. Dixon*
13. Do U.S. Policy Makers Have Better Alternatives to Cap and Trade?, *Jan W. H. Parry, Robertson C. Williams III*

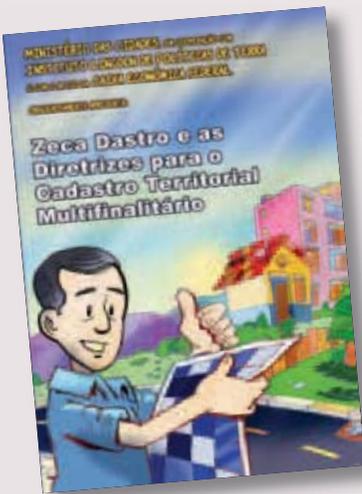
#### Governance and Environmental Policy

14. The Environment and Global Governance: Can the Global Community Rise to the Challenge?, *Uma Lele, Aaron Zazueta, Benjamin Singer*
15. American Federalism and Climate Change: Policy Options and Public Opinion, *Barry G. Rabe, Christopher P. Borick*
16. Climate Change and the Management of National and State-Owned Land in the United States, *Christopher McGrory Klyza*

#### ABOUT THE EDITORS

**Gregory K. Ingram** is president and CEO of the Lincoln Institute of Land Policy and cochair of the Department of International Studies. Contact: [gkingram@lincolninstitute.edu](mailto:gkingram@lincolninstitute.edu)

**Yu-Hung Hong** is a senior fellow at the Lincoln Institute and a visiting assistant professor at Massachusetts Institute of Technology. Contact: [hong@lincolninstitute.edu](mailto:hong@lincolninstitute.edu)



**Zeca Dastro e as Diretrizes para o Cadastro Territorial Multifinalitário**

**José K. Tastro y las Directrices para el Catastro Territorial Multifinalitario**

**Zeca Dastro and Guidelines for the Multipurpose Territorial Cadastre**

This illustrated booklet provides a user-friendly representation of typical situations that employees of Brazil's municipal cadastre departments confront in their efforts to implement new land information systems that can meet the demands of both the public and private sectors. The text provides a simplified interpretation of the country's 2009 Guidelines for the Multipurpose Territorial Cadastre (Diretrizes para o Cadastro Territorial Multifinalitário).

The booklet was developed by Brazil's Ministry of Cities and the Lincoln Institute of Land Policy, with support from the Caixa Econômica Federal, to help orient residents of more than 5,000 local municipalities in cadastral management. It is available for free downloading from the Lincoln Institute Web site in the original Portuguese edition or in a Spanish translation.

2010 / Portuguese / 46 pages /  
Code: guiacadPO  
[www.lincolninst.edu/pubs](http://www.lincolninst.edu/pubs)

2010 / Spanish / 46 pages /  
Code: guiacatSP  
[www.lincolninst.edu/pubs](http://www.lincolninst.edu/pubs)

**Courses and Conferences**

The education programs listed here are offered as open enrollment courses for diverse audiences of elected and appointed officials, policy advisers and analysts, taxation and assessing officers, planning and development practitioners, business and community leaders, scholars and advanced students, and concerned citizens.

For more information about the agenda, faculty, and registration procedures, visit the Lincoln Institute Web site at [www.lincolninst.edu/education/courses.asp](http://www.lincolninst.edu/education/courses.asp).

**MONDAY–FRIDAY, MAY 2–6  
Medellín, Colombia**

**Legal Dimensions of Land Policy**  
**Martim Smolka, Lincoln Institute of Land Policy; María Mercedes Maldonado, National University of Colombia; Antonio Azuela de la Cueva, Autonomous University of México; Sonia Rabello, University of the State of Río de Janeiro and Río de Janeiro City Council, Brazil**

This course examines the role of legal systems on land use planning, regulation of land markets, and urban development processes. It also reviews the most important fundamentals, principles, and institutions from a legal point of view and how they support land policy. It combines concep-

tual aspects, a review of the Latin American legal reforms, and the effects of alternative policy and instruments on specific issues such as public land acquisition, value capture, or social housing. The course is offered in collaboration with the Metropolitan Area of the Aburrá Valley and the Institute of Urban Studies at the National University of Colombia.

**Lincoln Lectures**

This annual lecture series highlights the work of scholars and practitioners who are involved in research and education programs sponsored by the Lincoln Institute. The lectures are presented at Lincoln House, 113 Brattle Street, Cambridge, Massachusetts, beginning at 12 p.m. (lunch is provided). Consult the Lincoln Institute Web site ([www.lincolninst.edu/news/lectures.asp](http://www.lincolninst.edu/news/lectures.asp)) for information about other dates, speakers, and lecture topics. The programs are free, but pre-registration is required. Go to the Web site or email [bburgess@lincolninst.edu](mailto:bburgess@lincolninst.edu) to register.

**WEDNESDAY, APRIL 6  
Conserving Large Landscapes: Stories from the West**  
**Jamie Williams, Director of Landscape Conservation, The Nature Conservancy**

**WORKING papers**

More than 710 working papers are currently available for free downloading on the Lincoln Institute Web site. Some papers by associates affiliated with the Institute's Latin America and China programs are also available in Spanish, Portuguese, or Chinese. The following papers that have been posted since January 2011.

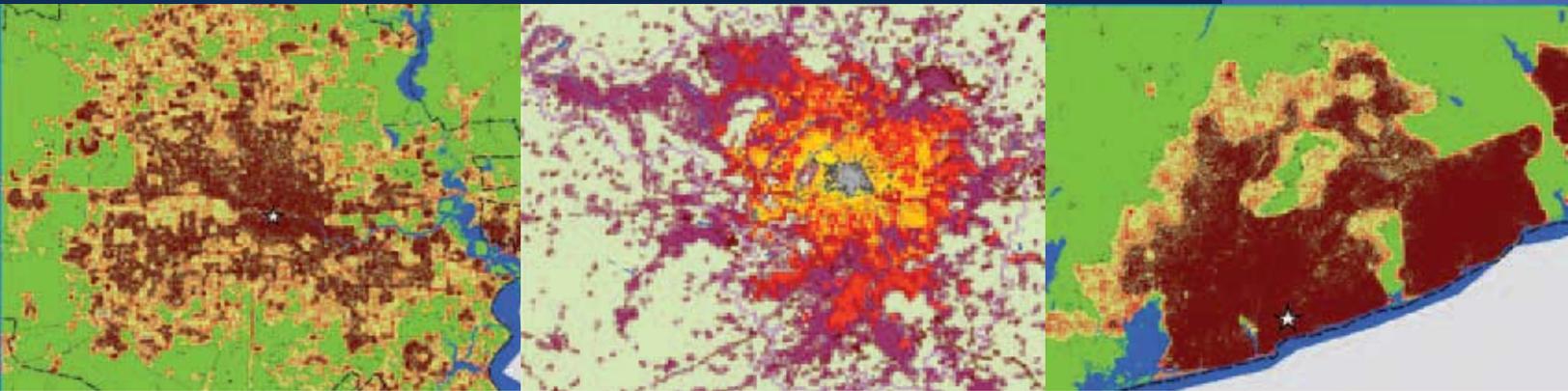
Oscar Borrero, Esperanza Durán, Jorge Hernández, and Magda Montaña  
**Evaluating the Practice of Betterment Levies in Colombia: The Experience of Bogotá and Manizales**  
(also available in Spanish)  
**Evaluación de las Prácticas de Contribución de Mejoras en Colombia: La Experiencia de Bogotá y Manizales**

Peter W. Culp, Susan K. Culp, and Dan Hunting  
**Building a Framework for Sustainable Development: Legal Requirements and Strategies for the Development of Public Infrastructure on Arizona State Trust Lands**

Jeremy R. Groves  
**Estimating the Responsiveness of Residential Capital Investment to Property Tax Differentials**

Joan Youngman  
**The Valuation of Federally Subsidized Housing: Ten Questions for the Property Tax**

# What's New on the Web



Houston, Texas

Paris, France

Accra, Ghana

## Atlas of Urban Expansion

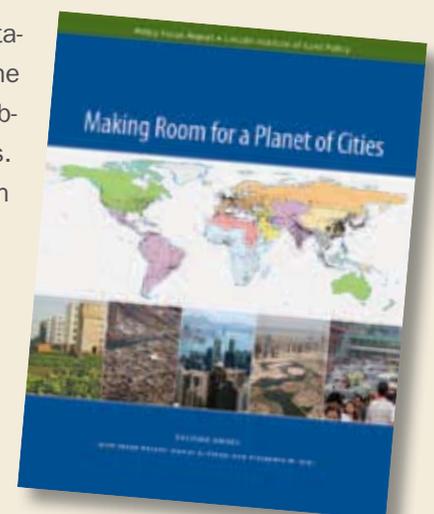
AN ONLINE DATABASE OF GLOBAL CITIES

Massive urbanization, accompanied by the rapid expansion of cities and metropolitan regions and the sprawling growth of megacities around the world, is one of the most important transformations of our planet. Yet, much of this explosive growth has been unplanned and cities in developing countries have been unprepared for absorbing the many millions of the rural poor still crowding into informal settlements. These cities are expected to double their urban population in the next thirty years, and possibly triple their land area.

While the great transformation into an urban society is largely completed in industrialized countries, there are growing concerns about continuing low-density sprawl and its deleterious environmental consequences—the effects on carbon emissions, energy use, and the loss of prime agricultural lands. Urban expansion, in short, is now a global concern.

The Web-based Atlas of Urban Expansion provides the geographic data and quantitative dimensions of urban expansion and its key attributes, focusing on 120 cities the world over. The data and images are available for free downloading, for scholars, public officials, planners, international development specialists, and concerned citizens. The global empirical evidence presented here is critical for an intelligent discussion of plans and policies to manage urban expansion everywhere.

This online atlas accompanies the Institute's recent policy focus report *Making Room for a Planet of Cities*, a comprehensive and original analysis of the conceptual framework and quantitative dimensions of past, present, and future global urban land cover. The report culminates in a proposed new "making room" paradigm to help cities prepare for continued massive growth and expansion. Further analysis is available in three related working papers: *The Persistent Decline in Urban Densities*; *The Fragmentation of Urban Footprints*; and *A Planet of Cities: Country Estimates and Projections of Urban Land Cover, 2000–2050*. All of these publications are also available for free downloading on the Institute's Web site.



## Land Lines

APRIL 2011

### 2011 Publications Catalog

The Lincoln Institute's 2011 Publications catalog features more than 100 books, policy focus reports, and multimedia resources. These publications represent the work of Institute faculty, fellows, and associates who are researching and reporting on the following topics: property taxation, valuation, and assessment; urban and regional planning; smart growth; land conservation; housing and urban development; and other land policy concerns in the United States, Latin America, China, Europe, South Africa, and other areas around the globe.

The complete catalog is posted on the Lincoln Institute Web site. To request a printed copy of the catalog, send your complete mailing address to [help@lincolninst.edu](mailto:help@lincolninst.edu).

