Land Lines

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APRIL 2016

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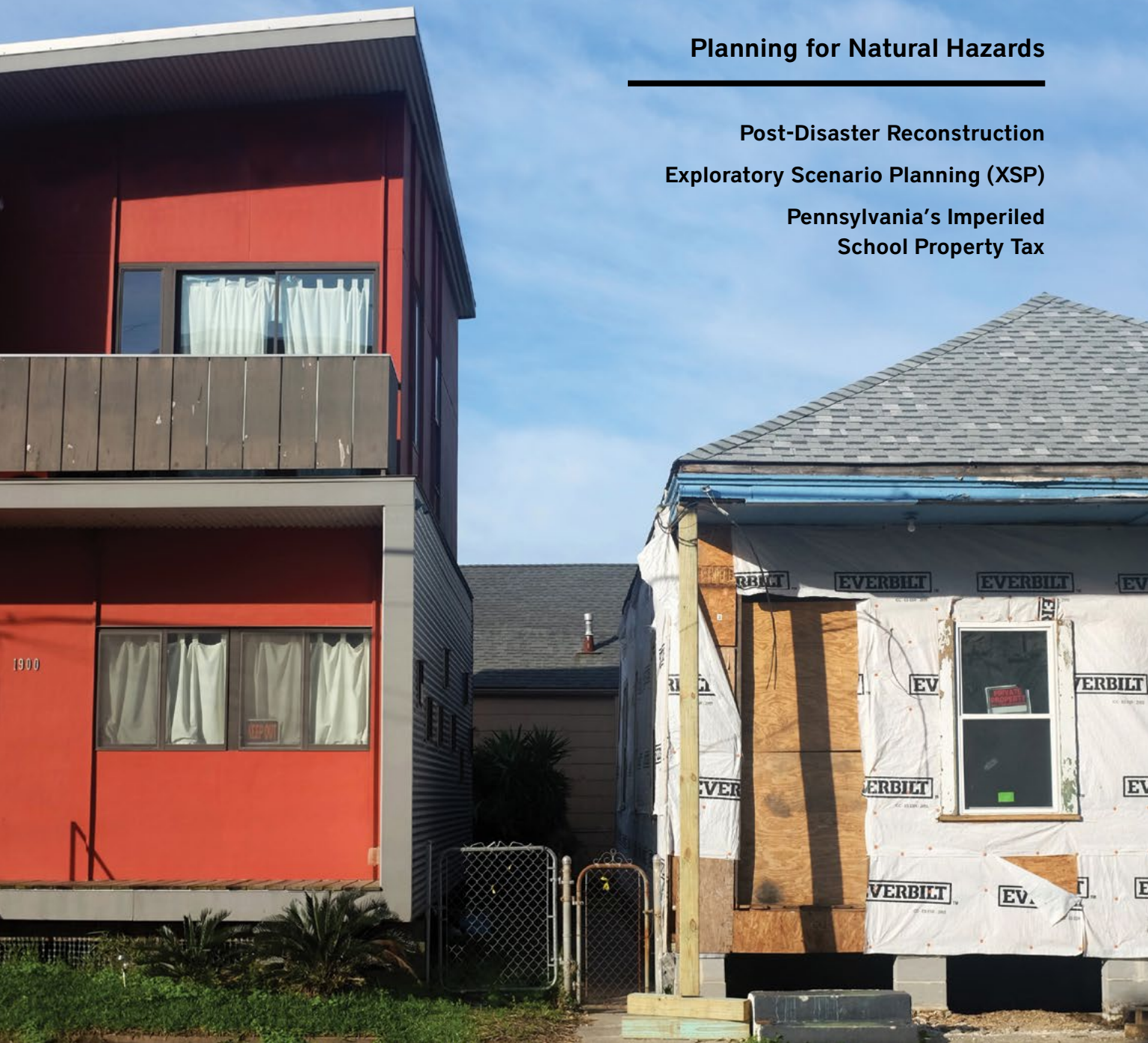
Post-Disaster Reconstruction

Exploratory Scenario Planning (XSP)

Pennsylvania's Imperiled School Property Tax



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is an independent, nonpartisan organization whose mission is to help solve global economic, social, and environmental challenges to improve the quality of life through creative approaches to the use, taxation, and stewardship of land. As a private operating foundation whose origins date to 1946, the Lincoln Institute seeks to inform public dialogue and decisions about land policy through research, training, and effective communication. By bringing together scholars, practitioners, public officials, policy makers, journalists, and involved citizens, the Lincoln Institute integrates theory and practice and provides a forum for multidisciplinary perspectives on public policy concerning land, both in the United States and internationally.

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LINCOLN INSTITUTE
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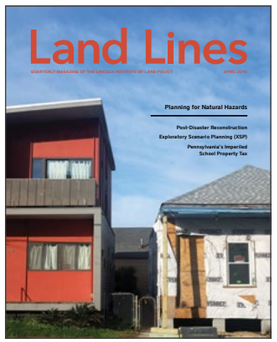
Contents

FEATURES

DEPARTMENTS



Cover photo: Through Tulane University's URBANbuild program in New Orleans, students are designing and building LEED-certified homes, such as this one in Faubourg Delassize. Credit: Clarence Williams, III.

Who Will Pay for Our Urban Future?

Humans have had a love-hate relationship with urbanization for hundreds of years. In the mid-18th century, at the dawn of the Industrial Revolution, common fields and pastures were enclosed to force peasants into wage labor and life in the slums of the industrial cities of Europe. These involuntary urbanites lived in abysmal conditions, crowded into substandard dwellings and choked by fumes belched from coal-fired factories. Wealthy families retreated to the countryside in summers to avoid inevitable outbreaks of pestilence, cholera, and other diseases. Fortunately, at the same time, many of the negative attributes of urbanization were being addressed by a new invention—the public sector or local government. Public Works were created to build roads and sewers, to find and deliver potable water, and to segregate land uses so that residences were separated from dirty industries.

Perhaps, in the 21st century, we can be clever enough to usher in a third round of urbanization, where cities provide the answers to global environmental stress, and countries continue to see declining poverty but also reductions in inequality.

This progress ushered in an epoch, in the mid-19th century, during which the cities of the world grew with voluntary inhabitants who were drawn to the amenities and excitement of urban life. Public Works delivered water and power directly to residences. New transport systems moved food and materials from farms and mines, and moved workers from their homes to jobs. Cities flourished and became the economic powerhouses of national economies, but this new urban model was undermined by two basic contradictions. As we reorganized our space to feed and fuel cities, we put increasing pressure on natural systems. And, as countries urbanized, we reduced abject poverty but increased inequality. We also found new ways to insulate the wealthy from negative aspects of urban life in exclusive urban neighborhoods or suburbs.

During the first round of urbanization, we innovated to address the disease and pestilence that resulted from crowding people into poorly managed space. During the next round, we turned our cities into shiny places that attracted new residents, but we stressed out natural systems. We reduced poverty but we increased inequality and the social distance between people inhabiting the same space. Perhaps, in the 21st century, we can be clever enough to usher in a third round of urbanization, where cities provide the answers to global environmental stress, and countries continue to see declining poverty but also reductions in inequality. To do this, however, we'll need to recalibrate our understanding of the important role we as individuals play in paying for this evolution—reaffirming the social contract through which we pay our taxes to local government, and it rewards us with the public goods and services that define an exceptional quality of life.

It was a testament to the outsized reputation of the Lincoln Institute and a personal honor to be asked to lead, with the World Bank, one of the ten policy units tasked with drafting a New Urban Agenda, to be announced this fall at Habitat III, the Third United Nations Conference on Human Settlements. With the assistance of more than a dozen global policy experts nominated by their member states, we wrote the Policy Paper for Municipal Finance and Local Fiscal Systems, which recommends how the world will pay for the New Urban Agenda.

If you have not heard of the UN Habitat meetings, it is not surprising. They rarely occur. The convenings happen every 20 years and seek to advise national policies that lead to safer, healthier, and more livable cities. In 1976, the first United Nations Conference on Human Settlements, held in Vancouver, involved such illustrious global thinkers as Margaret Mead, Buckminster Fuller, and Mother Teresa. The Vancouver Action plan generated at the conference provided 64 policy recommendations for national governments "to adopt bold, meaningful, and effective human settlement policies and spatial planning strategies" that would facilitate high-quality urban development.

In 1996, Habitat II, held in Istanbul, followed on the heels of the 1992 United Nations Conference on Environment and Development (Earth Summit). Habitat II focused on connecting the urbanization agenda with global efforts to promote sustainable development. At the time, urbanists were disappointed that Agenda 21, the policy action plan from the Earth Summit, barely mentioned cities. And where it did, cities were considered part of the problem, not a solution, for global sustainability. The Habitat Agenda that emerged from the 1996 conference proposed a policy framework to guide national efforts for the next two decades to promote sustainable urban settlements. An important advancement of Habitat II was the creation of a reporting framework to hold national governments accountable for achieving the goals set forth in the Habitat Agenda, something missing from the Vancouver Action Plan.

Getting urbanization right is critical to achieving a sustainable human future on the planet. Getting urbanization right will require a commitment to deliver basic services to all residents, new and old, to use natural resources more efficiently, and to reduce our carbon footprint. And, last but not least, getting urbanization right means finding ways to pay for it.

As important as previous Habitat conferences were, they did not generate the impact or the cultural currency to which they aspired. This year, there are several reasons to believe that Habitat III, to be convened in October in Quito, Ecuador, will be different. First, the planet is predominantly urban now. We passed the halfway point for global urbanization around 2007, and current trends suggest that the planet will be 70 percent urbanized by 2050. All global population growth in the next three decades will occur in cities, which will add some 2.5 billion people. And, unless we choose a new approach, we will double the estimated 850 million to one billion people living in slums, favelas, and other informal settlements in cities around the world.

Second, international policy makers are beginning to take urbanization seriously. This shift is best illustrated in recently penned Sustainable Development Goals (SDGs) drafted by UN member states to update the Millennial Development Goals (MDGs) adopted in 2000 to govern global economic development policy through 2015. The SDGs will establish a global framework to promote more effective and responsible development through 2030. Unlike

We might borrow trillions of dollars to invest in new infrastructure, engineer new public-private partnerships, enhance intergovernmental transfers, or get it from the land. But in the end, whatever expenditures we make will be covered by revenues we collect from ourselves in one form or another.

the MDGs, the SDGs include specific goals and indicators that reference urbanization.

Third, and most importantly, because member nations will be required to report annually on their progress toward the SDGs, they will be taking the process of urbanization seriously. Built into this arrangement is a tacit admission that getting urbanization right is critical to achieving a sustainable human future on the planet. Getting urbanization right will require a commitment to deliver basic services to all residents, new and old, to use natural resources more efficiently, and to reduce our carbon footprint. And, last but not least, getting urbanization right means finding ways to pay for it. As stated in the Policy Paper: *The fiscal health of cities is a necessary condition for managing our global urban future. Fiscal health enables local governments to invest in the social and economic infrastructure that supports a higher quality of life, sustains economic growth, and helps localities prepare for and mitigate the effects of natural and financial crises.*

To accomplish this, we will need to grow existing sources of revenue and find new ones. And the biggest old and new source of local revenue to finance urbanization can be found in land.

When we invest in urban infrastructure, we make dense urban settlement possible and we increase the value of that land by many multiples. The tax base that is built from this more valuable land, and the improvements built on it, is the biggest old source of local revenue for cities, through the property tax. But a mostly untapped new source of revenue is the reclamation of land value increments that public infrastructure generates for private landowners, known as value capture. As we've seen in Latin America, the increase in land value through public investment is almost always a multiple of the investment itself. Capturing a share of land value increments can help us fund the infrastructure we'll need to welcome another 2.5 billion residents to our cities by mid-century.

Ironically, we resist land-based taxes more than other inferior revenue sources. While the property tax is the most stable local revenue source, it still accounts for a relatively small share of local government budgets, and, because it is usually the biggest direct tax paid by property owners, it is constantly under attack. Voters enlist the support of state, provincial, and national governments to constrain the ability of localities to collect property tax revenues by imposing rate limitations, or monkeying around with land value assessments, or both. And when they succeed, they undermine the advancement that is arguably the most important for separating us from our barbarian past—local government.

The municipal finance challenge can be summarized in one simple question: Who will pay for our future cities and towns? And the answer is quite simple. We will—just as we always have. We might borrow trillions of dollars to invest in new infrastructure, engineer new public-private partnerships, enhance intergovernmental transfers, or leverage funding from the land, as I think we should. But, in the end, whatever expenditures we make will be covered by revenues we collect from ourselves in one form or another. Presumably, we'll be happy with the quality of the urban life that we purchase. But that will require our collective commitment to pay what it costs for the services we want and need—and that will start by reminding ourselves of the essential role that local government plays in delivering these benefits.

CoUrbanize's Online Community Planning Forum

AFTER KARIN BRANDT FINISHED HER MASTER'S DEGREE at the Massachusetts Institute of Technology, she noticed some frustration among her former classmates in planning. "The idea of creating change that we talked about in grad school wasn't being realized," she recalls. One of the reasons was that the process of engaging with the broader public often proved to be a challenge.

Meanwhile, she continues, friends from other MIT departments were "starting companies, solving problems, doing really interesting things" with technology. Perhaps, she concluded, there was a useful overlap in these two divergent trends. Maybe innovative technology could be used to improve some public-facing elements of the planning process. So in 2013, after leaving a position as a research analyst at the Lincoln Institute, Brandt founded coUrbanize along with data scientist and fellow MIT grad David Quinn. The venture-backed startup offers a planning-centric communications platform, designed to ease and enhance the way that planners, developers, and the public interact around specific projects.

The underlying challenge here was, of course, familiar to anyone involved in the profession. "The traditional planning meeting, with the microphone, and the signup list, and three minutes per speaker, is important," says Amy Cotter, a veteran of Boston's Metropolitan-Area Planning Council who is now manager of urban development programs at the Lincoln Institute. "But it's of limited value." In short, only some members of a community have the time or inclination to participate in such forums—resulting in a limited perspective on what a community really thinks about a development or planning initiative, leaving potentially useful feedback and input unexpressed.

In the past, some treated this step of the planning process as "a more technical exercise" that privileged expert data over community input, Cotter continues. "But the planning field has been undergoing a transition. At this point, most planners feel their plans are richer and better if people are engaged." But securing that engagement is easier said than done.

Ken Snyder, founder and CEO of the Denver-based nonprofit PlaceMatters, observes that, over the past five or ten years, there has been a growing movement around innovation that increases community engagement, and it very much includes new technologies. Urban Interactive Studio's EngagingPlans platform is one example. Another is CrowdGauge.org—developed by Sasaki Associates and PlaceMatters. The latter is an "open-source, web-based tool for creating educational online games" that can help "summarize, communicate, and rank ideas that emerge from visioning processes and incorporate them into decision making." (Snyder has compiled an informal but highly useful list of creative planning tools and initiatives at bit.ly/placematters-tools.)

CoUrbanize provides a forum for people who can't show up for planning meetings: a worker with a night shift, parents who need to be home, or millennials who find the online context easier and more convenient.

Brandt says her own research led her to conclude that the three major actors in most projects—planners, developers, and the community at large—really all sought the same thing: more transparency from the other two parties. In other words, as much as planners wanted more public input, citizens often felt they weren't getting enough information in a truly accessible form.

CoUrbanize was developed with direct input from planners and developers, and the platform provides a central online home for public information on any given project. That means it serves as both a forum for community feedback,

and as a spot where plans and proposals are widely accessible. And importantly: This aims to be a flexible touchpoint that supplements, but does not mean to replace, real-world feedback mechanisms, both traditional and otherwise.

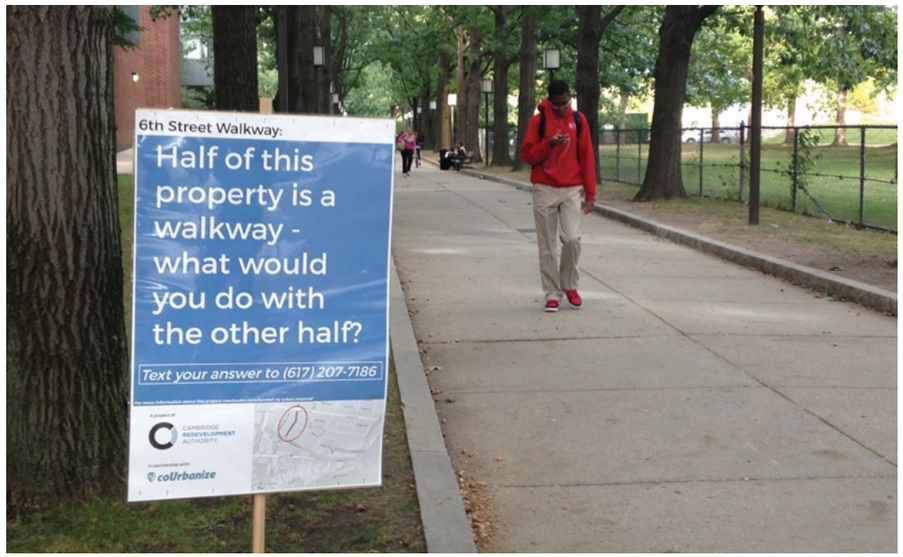
One of the most interesting examples so far has involved the Kendall Square Urban Renewal Plan in Cambridge, Massachusetts. The Cambridge Redevelopment Authority and developer Boston Properties are collaborating on a public/private effort that will entail a million square feet of new commercial and residential development. Working with coUrbanize, the developer distributed poster-style signage asking real-world users of the relevant space for thoughts on its potential uses. This meant anyone could text in their answers, which were collected in an online coUrbanize community forum.

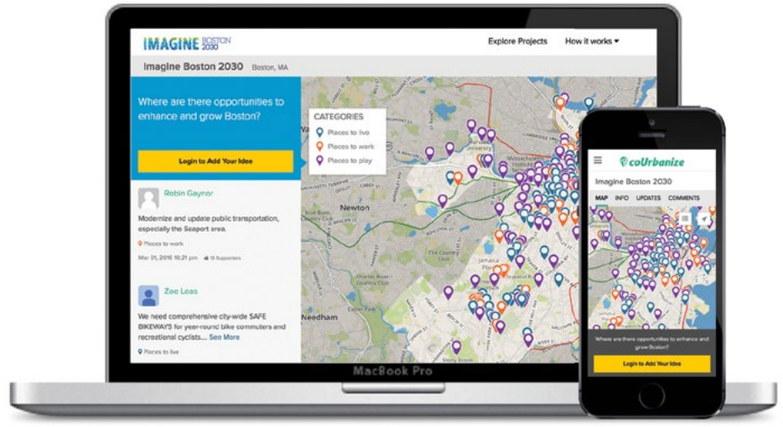
"People have much more interesting ideas when they're in a physical space," Brandt says. "And most people don't know what they *can* say. So prompting them with specific questions really helps." The exercise drew more than 200 comments, plus additional data from forum users supporting or disagreeing with those comments. The planning and development team "made changes to their plan, based on feedback," Brandt says—including the addition of more substantial affordable housing, and the inclusion of "innovation space" that offered below-market rates to qualified startups. Work on some of the ideas for open space that evolved on the platform will be underway soon, she adds.

The key here from a planning perspective is to broaden the range of input. Maybe that means hearing an idea that would never have surfaced in a traditional community meeting. But arguably more important is a clearer sense of what "the community" around a particular project—not just the people who turn up at a public meeting—really wants, supports, or objects to.

Cotter points out—and Brandt emphatically agrees—that those in-person hearings still matter. But a platform like coUrbanize provides a forum for people who can't (or just don't want to) show up for such gatherings: a worker with a night shift, parents who need to be home during a scheduled meeting, or millennials who just find the online context easier and more convenient.

Signs invite pedestrians to text suggestions for how public spaces should be repurposed through the Kendall Square Urban Renewal Plan in Cambridge, Massachusetts. Credit: Karin Brandt.





The City of Boston is using coUrbanize's coMap to digitally engage community members in development of the city's first master plan in 50 years. Credit: Karin Brandt.

"One of our clients," Brandt says, "calls us a 24-hour community meeting." (Notably, coUrbanize includes "community guidelines" that require citizen-users to register with their real names, which has minimized the planning-feedback equivalent of spam. "We hear from our municipal partners that the feedback they get on coUrbanize is often a lot more on point," Brandt says.)

To make the most of this accessibility, cities or developers using coUrbanize or any such platform must give some fresh thought to how they present their ideas. As Cotter notes, even basic terms like "setback" or "density" may mean little to a layperson. (As a prompt for community feedback, PlaceMatters has used such creative means as a "pop-up" installation to demonstrate the benefits of a protected bike lane in Portland, Oregon, in real, physical space.) CoUrbanize offers planners and developers an intuitive template for presenting ideas in both images and words—almost like a Kickstarter campaign's home page.

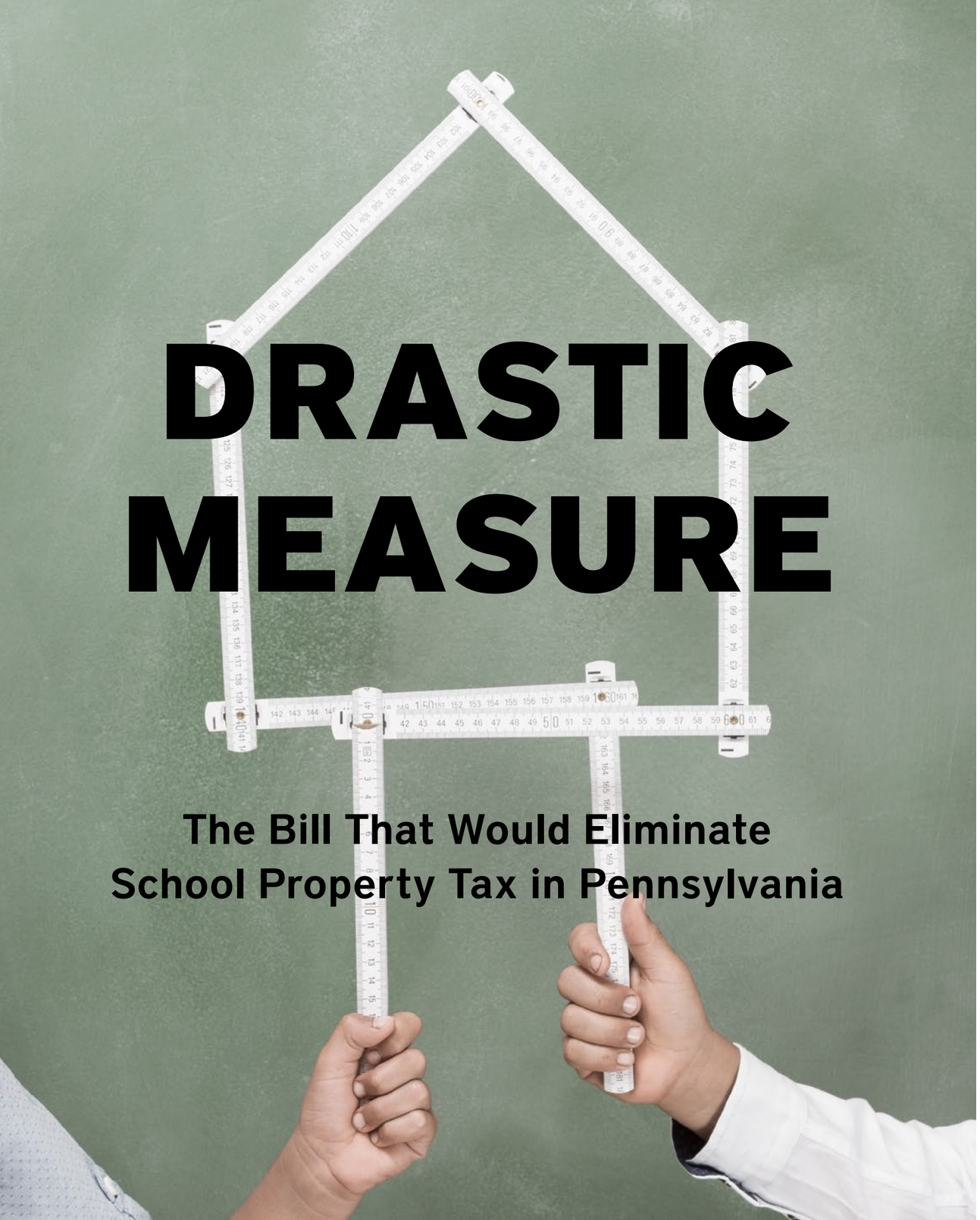
Of course, it's really up to users to make the most of the platform. And because the coUrbanize business model depends in part on developers signing on, Brandt emphasizes that this sort of platform can more quickly and efficiently reveal problems that under normal circumstances could have led to costly project delays. Most of the firm's early clients and projects are concentrated in Massachusetts, but it has also worked with others in Atlanta and elsewhere who have sought out coUrbanize. This year, the firm will expand its focus to New York and San Francisco.

The key is to "give people the confidence that they've been heard, and that their input will be considered."

The ideal is a "win win win," as Brandt puts it—benefiting all players. Certainly, the potential payoff for actual community members—users of coUrbanize, but also of other efforts to broaden the planning process with technological tools—is particularly intriguing. And, as Cotter says, that is something planners have sought for years, and it's becoming more plausible as technologies improve. The key, she says, is to "give people the confidence that they've been heard, and that their input will be considered." Even if that input isn't followed, it should be made clear what tradeoffs were involved and why.

"So many people don't know that they can shape their neighborhoods," Brandt says. "They don't know what planning is, and they've never been to a meeting." Maybe the current wave of tech-driven platforms can help change that: "A lot more people are online," Brandt argues, "than those who are available at 7 o'clock on Tuesday night."

Rob Walker (robwalker.net) is a contributor to Design Observer and *The New York Times*.



By Denise-Marie Ordway

PROPERTY TAXES HAVE BECOME SUCH A CONTENTIOUS ISSUE IN PENNSYLVANIA that residents from at least 84 different grassroots groups have banded together to push for changes that include eliminating the school property tax—even if it means funding education through other sources that might not be as reliable.

A Decade of Failed Reform

Especially in more recent years, residents and other property owners in the nation's sixth-most populous state have filled meetings, written their legislators, and spoken out loudly against the tax that local governments levy on houses, land, and other property. Pennsylvanians shoulder one of the largest overall tax burdens in the country, and many frustrated home owners there complain that property taxes are too high. Property tax rates have risen even as median household incomes have remained stagnant or declined in most cities in the Keystone State. Meanwhile, a property tax reform bill passed by the state legislature in 2006 has failed to live up to expectations, partly by failing to give residents the control they wanted over the largest portion of their property tax bills—the part that funds public schools and, in some communities, makes up more than one-half of the total tax bill. Under the Taxpayer Relief Act, each school board is required to get voter approval before it can adopt a tax rate that exceeds a cap tied to inflation. For years, however, dozens of school districts have avoided a voter referendum by asking the state Department of Education for special exemptions.

These concerns are priorities for lawmakers. But state leaders acknowledge that changing their property tax system is much more complex than it seems. Cutting taxes for some groups of people means boosting them for others, unless leaders can identify new sources of revenue able to generate at least the same amount of money needed for public education, police protection, waste management, and other local government services. Today, Pennsylvania school districts, counties, and municipalities rely heavily on property taxes. In fact, schools in the commonwealth rely on property taxes more than schools in most other parts of the United States. About 45 percent of the funds that pay for public schools in the commonwealth come from property taxes, according to data from the U.S. Census Bureau for fiscal year 2013. Nationwide, about 37 percent of school district revenue came from property taxes that year.

Pennsylvania Senate Bill 76—also known as the Property Tax Independence Act—aims to slash property tax bills by eliminating school property taxes. By a very narrow margin, the measure failed to garner enough votes last year to get through the Pennsylvania Senate, and its sponsors plan to push for another vote this year.

While Pennsylvania lawmakers acknowledge the need for reforms, they have not yet developed a plan that residents, local governments, the business community, and other stakeholders can agree upon.

Property Tax Independence Act

During the last several years, multiple proposals have come forward and then been rejected. A controversial bill introduced in 2015 offers some of the most drastic changes of any property tax reform measure to come before a state legislature in recent years. Pennsylvania Senate Bill 76—also known as the Property Tax Independence Act—aims to slash property tax bills by eliminating school property taxes. By a very narrow margin, the measure failed to garner enough votes last year to get through the Pennsylvania Senate, and its sponsors plan to

push for another vote this year. The bill enjoys bipartisan support as well as backing from the Pennsylvania Association of Realtors and groups such as the TriCounty Campaign for Liberty and the Lower Bucks County Taxpayers Association. Under Senate Bill 76, school property taxes would be abandoned over time. Districts with debt would be able to continue charging a small amount, but only enough to finance the annual payments on their debt service, and only until that existing debt is paid off. The legislation does allow districts to levy a local Earned Income Tax or Personal Income Tax for specific projects and programs, but those plans would require voter approval.

The Pennsylvania Budget and Policy Center calls the elimination of school property taxes "an extreme response to a limited problem." It has been urging legislators to reform the tax system by making targeted changes that will not hurt schools.

School property taxes would be replaced by a higher sales tax, a higher personal income tax, and other changes. The bill's sponsors expect these new funding sources to generate the billions of dollars a year needed to help pay teachers and staff and otherwise keep the state's 500 public school districts running. This academic year, education property taxes will raise an estimated $13.7 billion statewide, according to projections that the Legislature's Independent Fiscal Office released in late 2014.

State Senator Mike Folmer, a father of two and grandfather of seven who is among the bill's most vocal proponents, said a drastic change is needed because taxes have risen sharply in parts of Pennsylvania, leaving some residents struggling to pay their bills. Families want help. "When I go to houses and knock on everyday folks' doors, and I say 'Hi! I'm here to educate you about Senate Bill 76', and I go into it with them . . . they say, 'You know what? I'm with you. I get this,' " says Folmer, of Lebanon City. "They're overwhelmingly in favor. Actually, I cannot remember a 'no.' "

Pennsylvanians have indicated property taxes are a key concern. A spring 2015 poll conducted by Franklin & Marshall College, in Lancaster, found that 77 percent of voters think the tax system needs to be overhauled. Most Pennsylvanians who participated in that poll—60 percent—said they would favor a plan that would increase the state income tax from 3.07 percent to 3.7 percent if it meant their property tax bill was chopped by $1,000.

Among those who feel strongly about the issue is Kelly Sharp, of Grantville, who says she almost lost her house a few years ago because she was unemployed and could not pay her property taxes. At the time, she had enough money to cover her mortgage but not enough for her mortgage and property taxes. After battling her bank for months, Sharp finally was able to negotiate monthly payments she could afford. Today, the mother of five is manager of the canteen at her local VFW Post. Although she and her husband now work full-time, it still will be tough, she says, to come up with the $6,814.80 she owes in property taxes this year on her five-bedroom home. Sharp says she wants to move to a less expensive state. "We just can't afford it anymore," she says. "These taxes are just crazy on so many different levels. Not just the amount, but the power and authority people have to destroy you with these taxes."

There are multiple reasons why Senate Bill 76 has gained support among tens of thousands of property owners statewide, says David Baldinger, a spokesman for the Pennsylvania Coalition of Taxpayer Associations, an umbrella organization representing the grassroots groups that are fighting education taxes. While many people cite frustrations over rising property taxes and fears about losing their homes, a number of people also think it is more fair to fund schools using sales and income taxes—because a larger share of individuals pay those taxes, Baldinger says. He points out that residents can control the amount they pay in sales taxes, which are paid by the tens of millions of visitors traveling to Pennsylvania each year as well.

"Without question, [property owners] know they will save money by getting rid of education property taxes," says Baldinger, a retiree from Reading who said his total property tax bill is about $8,000, with about $6,500 levied by the local school district. No recent legislative analysis has been done, however, to gauge whether and how much property owners would save if the state were to replace education property taxes with a higher sales and income tax.

Opposition to Senate Bill 76

Despite support from many property owners, Pennsylvania Governor Tom Wolf opposes Senate Bill 76, and dozens of organizations have rallied against the measure as well. Among them are advocacy groups for children and the poor, such as the Pennsylvania State Education Association, Public Citizens for Children and Youth, Pennsylvania Council of Churches, and Coalition Against Hunger. At least some opponents object because the bill would raise the personal income tax from the current 3.07 percent to 4.34 percent. The bill calls for increasing the state sales tax from 6 percent to 7 percent, as well as expanding the scope of taxable goods to include some clothing items, some types of food, child care services, and nonprescription medications.

The business community has spoken out against the measure, too. The Pennsylvania Chamber of Business and Industry has expressed concerns that increased sales taxes will affect local businesses, especially retail stores in communities that border Delaware, which has no sales tax, and Maryland, where the tax rate is 6 percent.

Kathy Swope, president of the Pennsylvania School Boards Association, criticized the bill for allowing large corporations and other businesses to stop paying education property taxes. A significant portion of school property taxes come from commercial and industrial property in the state. In the Philadelphia city school district, for example, more than 44 percent of property was assessed as either commercial or industrial in 2012, according to an analysis from the Pennsylvania Budget and Policy Center. "Taxation works best when it is spread across many contributors," Swope says. "Completely relieving businesses of the obligation of any contribution—I'm not sure that is the best way to approach this."

In November 2015, Senate Bill 76 came up for a preliminary vote and almost passed the Senate. Following more than an hour of debate, legislators cast a tie vote of 24 to 24. The state's lieutenant governor, Mike Stack, in his role as Senate president, broke the gridlock by casting an opposing vote, which made front-page news across the commonwealth. But the bill's sponsors will try again. The primary sponsor, Senator David G. Argall, has said the close vote demonstrates how important tax cuts are to Pennsylvanians. A spokesman for Argall says Argall hopes the Senate will vote on the measure again in the coming months. And Senate Bill 76 might have a better chance of passing this time around. One of the cosponsors was absent for the last vote, as was a newly elected senator who is likely to favor the bill, according to local news reports. "Each session, we continue to pick up support in all parts of the state," Argall, a Republican representing 95 municipalities in Berks and Schuylkill counties, says in a prepared statement. "I've got news for the governor and the lieutenant governor who voted against us: We are not giving up."

It was not immediately clear how much support Senate Bill 76 has in the House. But Governor Tom Wolf has said he is concerned that

Children from Wellsboro, Pennsylvania, gather on the state Senate floor in Harrisburg during a tour of the Capitol. Credit: Hamilton-Gibson Children and Youth Choir.

Pennsylvania Governor Tom Wolf visits a classroom at Stonehurst Hills Elementary School in the Upper Darby School District in May 2015. Photo courtesy of the governor's office.

Senate Bill 76 would not bring in enough money, said Wolf's press secretary, Jeffrey Sheridan. While Wolf wants to offer residents property tax relief, he also wants to improve school funding—beyond the revenue raised through property taxes. The governor has spent the past year pushing to increase education funding in an effort to reverse the $1 billion in cuts that were made to school budgets before he took office in early 2015. Sheridan says those budget cuts were, in large part, the reason why school districts have had to boost property tax rates as well as increase class sizes and cut teaching positions.

Last March, Wolf unveiled a budget proposal for 2015–16 that called for boosting the state's share of public school funding to 50 percent for the first time since the 1970s, a press release from his office states. Today, the state pays considerably less—about 36 percent, according to data collected in fiscal year 2013, the most recent available from the National Center for Education Statistics. A joint report issued last summer by the Pennsylvania Association of School Administrators and the Pennsylvania Association of School Business Officials indicates that the state's share of education funding has slipped since 2008–09, even as school districts must cover increases in the cost of such things as special education and employee pensions and health benefits. "The reason that, in Pennsylvania right now, we couldn't just eliminate property taxes is because the state's share is inadequate," the governor's spokesman says. "That's something we inherited. It's unfortunate that districts are being forced to raise property taxes, and that's what he is trying to fix."

Wolf's original 2015–16 spending plan included changes to property taxes that would have resulted in tax cuts specifically for home owners. He had aimed to reduce property taxes by $3.8 million statewide and shrink the average home owner's school tax bill by more than half. Nearly 300,000 senior citizens' households would not pay school property taxes. Like Senate Bill 76, Wolf's proposal would have relied on increases in sales and income taxes to cover the cost of the change. That spending plan, however, was taken off the table in the midst of tense, ongoing budget negotiations with the legislature. Wolf introduced a second state budget proposal in February that did not include changes to property taxes.

The Dependability of the Property Tax

While Pennsylvania policy makers debate the best ways to revamp the state's property tax system, officials in other parts of the country are wrestling with similar issues. For example, a Texas Senate committee is holding meetings statewide to examine options for property tax relief before making recommendations to legislators. Nebraska Governor Pete Ricketts recently unveiled a property tax relief package that, among other things, aims to limit how much the value of agricultural and horticultural land can grow. Late last year, Florida's House Finance and Tax Committee briefly considered pursuing a plan to replace property taxes with a higher state sales tax.

As debates take place, economists and other experts have reached out to state leaders to help them understand the research behind tax strategies while also warning them of the consequences of cutting back on property taxes as a key revenue source, especially for public schools. Andrew Reschovsky, an economist and fellow at the Lincoln Institute of Land Policy, says the property tax is generally a much more stable and reliable funding source during a recession than sales and income taxes. He advises against decoupling education funding and property taxes.

Reschovsky, who also is professor emeritus at the University of Wisconsin-Madison, has written extensively about property taxes. In a report published in 2014, he explores states' reliance on property taxes to fund public education and concludes that tax revenue data demonstrate "the abiding stability of the property tax." In addition, he and public finance consultant Daphne A. Kenyon, who is a Lincoln Institute fellow as well, coedited a special issue of the academic journal *Education Finance and Policy* on the property tax and school finance, which included several papers focusing on property tax changes in states such as Michigan, Massachusetts, New York, and Iowa.

For example, in 1996, Michigan reformed its school finance system by reducing reliance on residential property taxes while raising new state revenue primarily from the sales tax. The new system for financing education is highly centralized at the state level, with state revenue distributed relatively evenly across the state's 540 local school districts. In recent years, however, the richest 20 percent of districts have been receiving about $600 per pupil more in state revenues than other districts. Substantial funding problems remain. Last September, a senior associate from the Citizens Research Council of Michigan reported that wide disparities exist in special education spending among the districts and that there are significant inequities in school construction spending.

South Carolina is another state that changed its tax system in response to demands from property owners. Under Act 388, passed in 2006, the state eliminated the school property tax on owner-occupied homes and replaced it with a new penny sales tax. Laura Dawson Ullrich, an economics professor at Winthrop University, says the trade has not been good for the state. "The sales tax increase has never made up for the reduction" in property taxes, Ullrich says. "Jurisdictions have increased taxes on businesses and owners of non-owner-occupied homes to make up for the gap." According to *The Greenville News*, lawmakers blame a combination of factors, including the Great Recession, overly optimistic revenue projections, and reliance on a revenue source that is not as stable as the one it replaced.

Circuit Breakers and Other Solutions

Reschovsky says that instead of abandoning school property taxes, Pennsylvania legislators should try to make the tax more attractive to property owners. One way to do that, he says, is through "circuit breaker" programs, which offer relief to individuals with high tax burdens in relation to their income. "Pennsylvania has a modest circuit breaker program that is available only to taxpayers over the age of 65 and to the disabled," Reschovsky says (figure 1, p. 14). "Making the circuit breaker available to all taxpayers, independent of age, who are facing high tax burdens would likely reduce opposition to the property tax."

Instead of abandoning school property taxes, Pennsylvania legislators should try to make the tax more attractive to property owners. One way to do that is through "circuit breaker" programs, which offer relief to individuals with high tax burdens in relation to their income.

Expanding Pennsylvania's circuit breaker program is one of the recommendations made by the Pennsylvania Budget and Policy Center, a progressive policy research project based in Harrisburg that calls the elimination of school property taxes "an extreme response to a limited problem." It has been urging legislators to reform the tax system by making targeted changes that will not hurt schools. The center also suggests requiring counties to reassess property regularly.

This is important because property taxes are based both on the tax rates set by local govern-

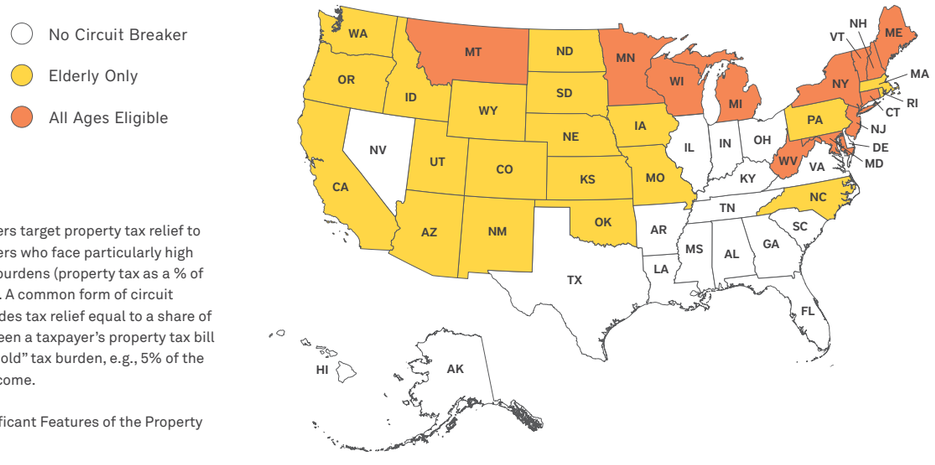
ments and an assessment of the value of the land, structure, or other property on which the tax is being imposed. A report that the Pennsylvania Budget and Policy Center released in 2014, when lawmakers were considering an earlier version of the Property Tax Independence Act, found that 43 percent of counties had not conducted reassessments in more than 20 years and that only one-third had reassessed property within the past decade.

"I'd say they feel the need to eliminate the property tax because they haven't taken the more sober and precise measure of expanding their circuit breaker."

The Pennsylvania Budget and Policy Center report also suggests that high property taxes are the exception in the commonwealth. The center's analyses show that, for most counties, total property taxes average less than $2,000 a year, with tax bills ranging from a low of $850 annually in rural Forest County, which includes part of the Allegheny National Forest, to a high of $4,364 in Chester County, a wealthy suburb of Philadelphia. Data from the 2014 Census' American Community Survey, however, indicate that a larger proportion of home owners pay high property taxes in Pennsylvania compared to the United States as a whole. Nationally, about 34 percent of home owners paid $3,000 or more in property taxes. Meanwhile, about 41 percent did in Pennsylvania.

But tax bills are not always the best measure of property tax burden. Many economists prefer to look at property taxes as a percentage of personal income. In Pennsylvania, property taxes made up 3.0 percent of personal income in 2013—just below the national average of 3.1 percent, according to the latest available Census data. Taxes are considered high in 30 of the state's 500 school districts, as property taxes exceed 4 percent of the districts' total taxable personal income. Meanwhile, an analysis released in December 2015 by the Pennsylvania State Data Center reports that median household income declined or stayed the same in 55 of the 57 Pennsylvania cities surveyed by the U.S. Census Bureau between 2005–2009 and 2010–2014.

FIGURE 1
STATE FUNDED CIRCUIT BREAKER PROGRAMS, 2014



Circuit breakers target property tax relief to those taxpayers who face particularly high property tax burdens (property tax as a % of their income). A common form of circuit breaker provides tax relief equal to a share of the gap between a taxpayer's property tax bill and a "threshold" tax burden, e.g., 5% of the taxpayer's income.

Source: Significant Features of the Property Tax, 2014.

Sarah Cordes, a professor of educational leadership policy at Temple University in Philadelphia, asserts that the most pressing problem in education finance is not funding sources. It is the fact that Pennsylvania is one of the few states that do not have an education funding formula that allocates state funds based on the current characteristics of a district—for example, a district's wealth, student characteristics, and changes in different categories of enrollment. Cordes says Pennsylvania's system for distributing state money to schools is "basically an automatic allocation," based primarily on how much money schools received in the previous year. A 2015 report from the Center for American Progress notes that Pennsylvania's highest-poverty districts spend more than 30 percent less per student than the lowest-poverty ones. But when comparing Pennsylvania to the rest of the country, *Education Week*'s Quality Counts 2016 report assigned Pennsylvania a grade of B in education spending and funding equity. Meanwhile, it gave the state a C in K–12 student achievement. Says Cordes: "If the goal is to produce better and more equitable educational outcomes for children across the state, then . . . the most important thing that needs to happen is that the state needs to come up with an education funding formula."

Kenyon, the public finance consultant, recommends that policy makers address school funding and property tax reform as two separate issues. She suggests targeting state aid to needy school districts to tackle the biggest student achievement challenges. Meanwhile, she urges lawmakers to target property tax relief to those property owners with hefty property tax burdens. "The consensus among public finance researchers is that property tax relief should be targeted to low- and moderate-income households through a mechanism such as a state-funded property tax circuit breaker program," Kenyon wrote in a 2007 report that summarizes some of the more pertinent research findings related to property taxes and school finance.

Kenyon, who served on New Hampshire's State Board of Education and on the Education Commission of the States, would urge Pennsylvania lawmakers to reconsider their property tax problem. "I'd say that they feel the need to eliminate the property tax because they haven't taken the more sober and precise measure, which I would highly recommend, of expanding their circuit breaker," she says.

Denise-Marie Ordway is a longtime education reporter and 2015 fellow of Harvard's Nieman Foundation for Journalism. Currently, she is an editor at Journalist's Resource, a project of Harvard's Shorenstein Center on Media, Politics and Public Policy in Cambridge, Massachusetts. She can be reached by email at denisemordway@gmail.com or via Twitter at @DeniseOrdway.

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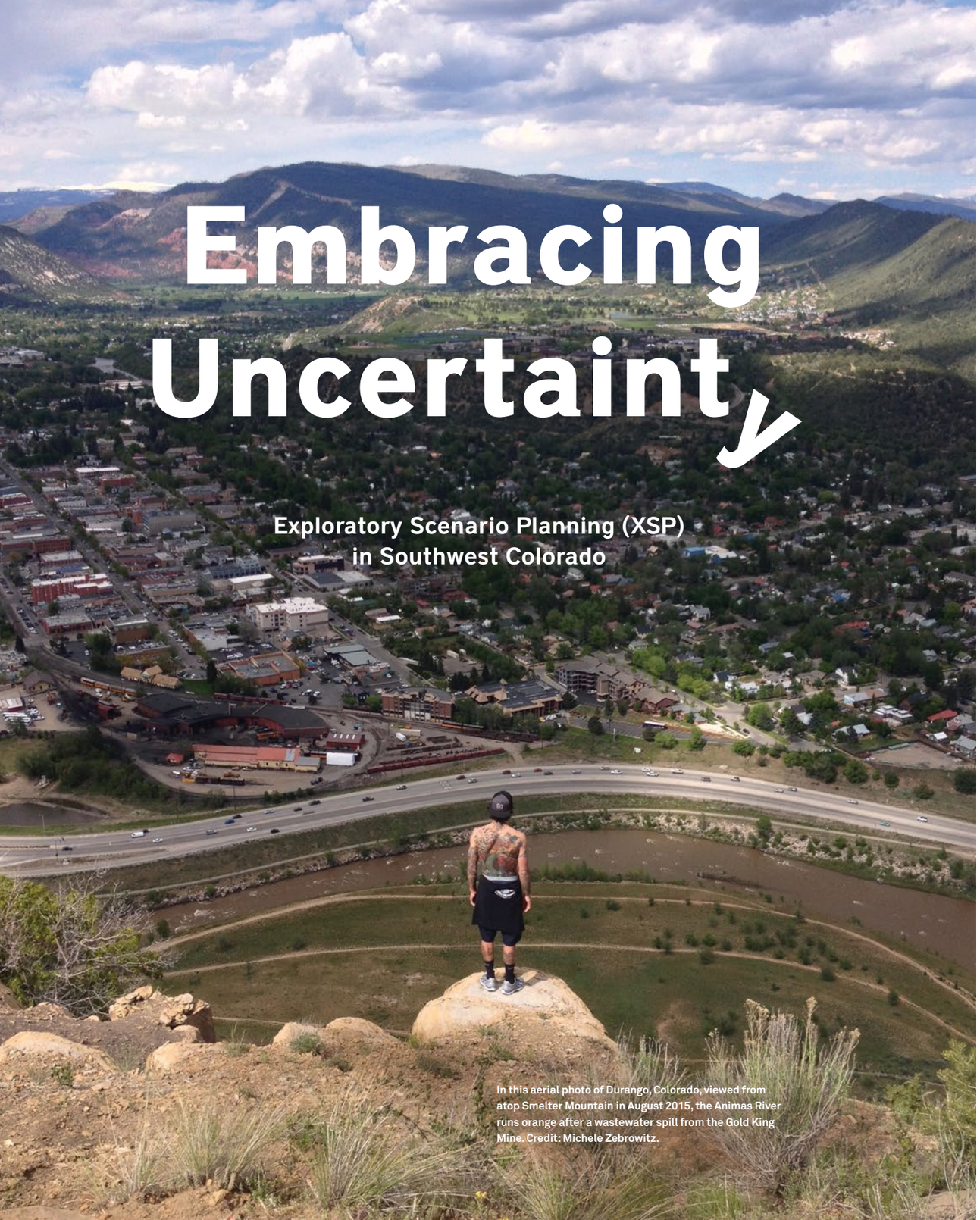
Embracing Uncertainty

Exploratory Scenario Planning (XSP) in Southwest Colorado



In this aerial photo of Durango, Colorado, viewed from atop Smelter Mountain in August 2015, the Animas River runs orange after a wastewater spill from the Gold King Mine. Credit: Michele Zebrowitz.

By John Wihbey

AMID THE JAGGED PEAKS OF THE SAN JUAN MOUNTAINS, in the northeast quadrant of the Four Corners regional border, is a cluster of five southwestern Colorado counties whose names evoke the region's rich and diverse history: Montezuma, San Juan, La Plata, Dolores, Archuleta.

Diverse, too, is the way of life and the economy of the region—from tourism and agriculture to fossil fuel extraction. Fewer than 100,000 people populate the varied and mountainous area. The cities of Durango and Cortez represent a bit of relatively bustling semi-urban life, while small mountain towns and two Native American reservations occupy outposts across the 6,500-square-mile area, roughly the size of Connecticut.

For these far-flung communities, planning for the future has become much more uncertain in the 21st century, as the wildcard of climate change and the vagaries of the energy industry have minimized sure bets. Educated guesses about the coming decades are getting harder to make across many dimensions: from unpredictable prices and revenues within the natural gas industry to swings in the size of the snowpack, affecting river flow, crops, and skiing alike. And many variables are highly interconnected.

"Our biggest question is our vulnerability to drought," says Dick White, city councilor in Durango. "Our agricultural and tourism industry could be totally disrupted if we go into long-term drought and have lots of wildfires."

Recognizing the need for wider policy coordination, a regional group of governing bodies formed the Southwest Colorado Council of Governments in late 2009, to address larger challenges and to seek out collaborative opportunities. Yet, in terms of policy, the roadmap to stability, sustainability, and economic prosperity has not necessarily become clearer.

The conundrums at hand may simply surpass the conventional planning tools themselves, observers say. Regional planning as a discipline, of course, stretches back decades, but the procedures, templates, and models employed—from "visioning" to "normative," "predictive," or "trendline" methods—are not always up to the task of grappling with irreducible uncertainties. So, last year, the Southwest Colorado Council embarked on an intensive process in partnership with Western Lands and Communities—a joint program of the Sonoran Institute and the Lincoln Institute of Land Policy—with an emerging policy tool that embraces the very idea of uncertainty: exploratory scenario planning, or XSP. Unlike the normative or traditional planning processes, it is not about what is preferred—an expression of community values—it is about what may happen beyond the control of planners involved.

Educated guesses about the coming decades are getting harder to make across many dimensions: from unpredictable prices and revenues within the natural gas industry to swings in the size of the snowpack, affecting river flow, crops, and skiing alike.

XSP requires participants to identify the greatest causes of uncertainty in their community and use those challenges to envision alternative scenarios of the future. Whereas two to four scenarios would typically result from more traditional forms of scenario planning, the Southwest Colorado Council created eight scenarios during their XSP sessions.

Early in 2015, consultants, experts, and regional policy makers converged in the city of Durango to unpack a crucial question that would generate relevant scenarios: "Given the possibility of extended long-term drought and its potential environmental impacts, how could the Five-County Region develop a more adaptable economy?"

The goal of the workshops themselves is to push the boundaries of the possible while staying within the bounds of the realistic. “You don’t want the scenarios to be so outlandish that community members can’t see themselves in it.”

The question—which the group worked out through a careful, community-oriented process—became the focus of an extensive process of fact-gathering and analysis. This research culminated in two workshops structured to explore a variety of regional “futures”—the possible and plausible ways in which life in southwest Colorado could play out. The time horizon was to be 25 years, through 2040.

Participants considered the interrelated impacts of several critical areas of uncertainty, including the length of potential drought, local production levels of natural gas, and the cost of oil.

The central idea behind XSP is to bring together stakeholders to advance a multistep planning process that imagines many futures and formulates strategic insights accordingly. Its methodological steps are roughly: first, formulate a core set of questions; then, precisely identify and rank the forces of change; next, create narratives around possible scenarios and their implications; and, finally, formulate active responses and discern actions that would help address multiple scenarios. The process, says Miriam Gillow-Wiles, executive director of the Southwest Colorado Council of Governments, furnished a fresh way to help planners and policy makers imagine regional dynamics. “I think it set the council of governments up to be not just another economic development organization or government organization, because we are doing something different,” she says.

The project was also another step by Sonoran and Lincoln toward fine-tuning the concept and ultimately testing the value of exploratory scenario planning—which has its early roots in the business management and military spheres—in the context of urban and regional planning. Other recent case studies have been explored in central Arizona, in the Upper Verde River Watershed and the Town of Sahuarita, just south of Tucson, Arizona.

“This is something that is not only a good idea intellectually,” says Peter Pollock, manager of Western Programs at the Lincoln Institute. “It will add real value to your community planning process to deal with real problems.”

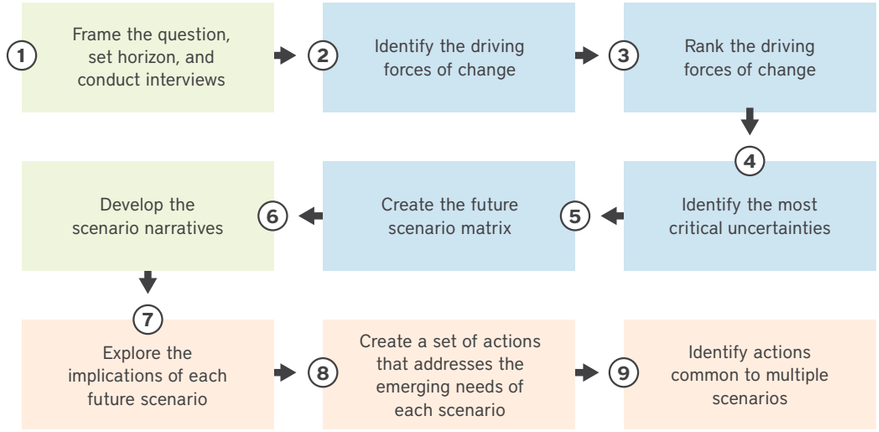
A Range of Futures

Dealing with real—and really tough—problems is the name of the game in southwest Colorado, as the region faces a “daunting” array of changes all at once, according to a 2015 report, “Driving Forces of Change in the Intermountain West,” prepared as part of the exploratory scenario planning process. Some are demographic—inflow of population, with more Hispanics, coupled with urbanization. Others relate to the “uncertain and complex” nature of the energy industries, which are affected by volatile global economic patterns.

Durango City Councilor White says he and fellow policy makers have been forced to think a lot about these shifts as their city considers a variety of infrastructure projects, from expanding the sewer treatment system to growing the size of the airport. White, a former Smith College astronomy professor who retired early and moved West to get involved in environmental policy, was a key member of the group that met last year in Durango as part of the Southwest Colorado Council of Governments.

Drought-related wildfires, like the Little Sand Fire that blazed through remote terrain in the San Juan National Forest in May 2012, are among the irreducible uncertainties that challenge planners in southwest Colorado. Credit: USFS/Handout/Corbis.

FIGURE 1
EXPLORATORY SCENARIO PLANNING PROCESS



Source: Southwest Water Resources Consulting.

“You’ve got this range of possible futures, and you really don’t know which road you’re going to go down,” he says. “The idea is to identify the biggest risks and best ‘no regrets’ policies.”

For White, the entire exercise of gaming out how varying drought conditions might affect the whole regional economy helped clarify issues. “Conceptually, I find that an extraordinarily useful policy tool,” he says. The sewer and airport infrastructure questions have subsequently been cast in a new light: “I have seen both of these decisions through the lens of [exploratory] scenario planning.” Given future uncertainties, White says he is determined to make investments that will give future policy makers flexibility should they need to make further infrastructure changes.

The final “low-regret” actions and strategies that stakeholders identified included: better coordination with federal agencies on forest management, public-private partnerships to promote use of biomass and biofuel, assessments of available land for development, identifying new opportunities to augment water resources from groundwater, the charging of real costs for water service and realistic impact fees, and support for small business and agriculture incubators.

Those insights and associated new perspectives are often hard-won, planners and participants concede. Exploratory scenario planning, as the southwest Colorado project demonstrated, can be a demanding process.

Hannah Oliver, who co-facilitated the scenario planning effort as a program manager with the Sonoran Institute in the Western Lands and Communities program, recalls driving all over the southwest Colorado region to get a feel for its land and its people and conducting many interviews with stakeholders. And that was just to prepare the groundwork—the “issues assessment”—for the stakeholder meetings.

The goal of the workshops themselves is to push the boundaries of the possible while staying within the bounds of the realistic. “You don’t want the scenarios to be so outlandish that community members can’t see themselves in it,” she says. The process aims to generate what Oliver, who was joined as a facilitator by

Designed in the 1880s to haul silver and gold from the San Juan Mountains, the Durango and Silverton Narrow Gauge Railroad now conveys tourists through the breathtaking scenery of southwest Colorado. Credit: Durango Area Tourism Office.

Ralph Marra of Southwest Water Resources Consulting, calls "Ah-hah" moments. In this case, participants came to understand the profound implications of lower gas production, severe drought, and swings in oil prices—with ripple effects across the tourism and agriculture industries and with deep overall impacts on the regional economy. Southwest Colorado, they realized, could face a very different future under certain plausible conditions.

"You come out exhausted," Oliver says of the typical initial workshop. "For the participants, it's like going to a boot camp. People coming out of that workshop say, 'I've never had to think like that before.'"

For community members, it can certainly take a lot of concentration to juggle the variables. "I think the whole way of scenario planning—if X, then Y—is a really useful way to look at things," says Gillow-Wiles. But "the whole process itself can be challenging, because there are so many unknowns."

Lessons Learned

A key to success, in any case, is to gather a broad range of people into the same room. In a wide and geographically dispersed region, that can be challenging. "Having a diversity of opinions is really important," says Oliver, who is now a village planner in Phoenix. "Because the stuff you get out of the workshops is only as good as what goes in."

Some southwest Colorado participants suggest that framing the exercise more directly around economic development or a more specific infrastructure issue (opposed to drought) might have attracted more participation from policy makers. "It's sometimes hard to get your board members to buy into that kind of pie-in-the-sky type of thing," says Willow-Giles, "versus something more tangible like 'What do we do with our population growth in terms of transportation 25 years from now?'"

Likewise, White cautions that the ability to create momentum and community energy is not a given. "If I had a lesson to draw," he notes, it's that "you have to really work hard to make sure that you continue to have appropriately diverse representatives at both ends of the process."

The southwest Colorado region has its share of political hot-button issues—including the politics of climate change and the dynamics of the fossil fuel companies there—but participants report that they steered clear of the land mines during the XSP process. (Drought, many note, has long afflicted the region, even prior to the Industrial Revolution; indeed, the ancient Puebloans likely left their famed cliff dwellings at Mesa Verde because of dry conditions.)

Pollock says that one of the virtues of XSP is that it allows in and even encourages conflicting views that can make it more inclusive, both in terms of process and outcomes. It minimizes arguments about which future is "right," and it helps build support for action among the diverse group that has come together to develop the strategies. "We think it is a way to defuse some of the political questions that make our public process overly rancorous and difficult," he says.

By bringing diverse ideas into the process early and openly embracing uncertainty, exploratory scenario planning can yield fewer surprises in the end for a community, according to Uri Avin, research professor and director of the Center for Planning and Design at the National Center for Smart Growth, University of Maryland. "The opponents of your end-state vision may, at the end of your visioning plan, come out of the woodwork and fight you," he says. "Whereas exploratory scenarios explicitly tend to invite dissention and debate, and the construction of scenarios that embrace other viewpoints."

One of the stark truths that can emerge from such a candid process is the reality that negative change may be likely under very plausible future conditions. Oliver says that participants in fact came to the realization that certain linear assumptions about the region's economic future may need to be scrutinized.

"I think what struck them is the understanding that the oil and gas industry may not be around forever," says Oliver. One of the biggest things they realized was how much they relied on money from natural gas production for basic services, she says. "They realized they might not be able to offer as many services if oil and gas were gone."

Avin says that XSP operates as a kind of antidote to the traditional notion of plans-as-silver bullets. But, politically, that realism can be a challenging sell. "It may include accepting decline or change that may not be palatable but may be inevitable if certain things happen," he says. "So the initial hurdle for planners is getting their arms around it and persuading their bosses who are elected officials that this is a good way to plan, and the payoff is in the long run."

Armando Carbonell, chair of the Department of Planning and Urban Form at the Lincoln Institute, says that, in an era when factors like climate change are now in play, planners and the public must increasingly rethink the way they conceptualize the future. "The key is how one thinks about uncertainty," he says. "We're better off to accept uncertainty, and the fact that uncertainty is irreducible. We need to learn to live with uncertainty, which is not at all a comfortable position for people and planners."

"What struck them is the understanding that the oil and gas industry may not be around forever. One of the biggest things they realized was how much they relied on money from natural gas production for basic services."

The process can be, so to speak, "longer in the short run," Avin notes, yet it's "shorter in the long run," as communities strategize based on realistic conditions. "It may be more rigorous and difficult, but it pays off because you have explored a range of outcomes that protect you from the future to some degree," he says.

The Lincoln Institute's 2014 working paper "Exploratory Scenario Planning: Lessons Learned from the Field," authored by Eric J. Roberts of the Consensus Building Institute, provides some preliminary insights gleaned from a variety of other projects nationally, focusing both on what worked well in other contexts and typical challenges encountered. The process design and scenario framing work are often rated highly by participants, Roberts finds, but the capacity of the convening organization must be up to the demanding challenges.

An Adaptive and Evolving Tool

Step back from the Colorado project and other recent pilot applications, and it becomes clear that the migration of exploratory scenario planning into mainstream land planning is still far from complete, despite its power and potential. Part of the solution is wider dissemination and increased access to the method's instruments. The Lincoln Institute's 2012 report *Opening Access to Scenario Planning Tools* surveys the evolving landscape. It notes, "The emergence of new and improved scenario planning tools over the last 10 years offers promise that the use of scenario planning can increase and that the goal of providing open access to the full potential of scenario planning tools is within reach."

"We need to learn to live with uncertainty, which is not at all a comfortable position for people and planners."

One of the report's coauthors, Ray Quay, a researcher with the Decision Center for a Desert City at Arizona State University, says that he has been using the exploratory scenario planning methodology for 20 years now. While he sees it being used by planners in the resource, water, and forestry communities, it has not yet taken hold among land planners and urban planners. "I think there are certainly situations where it can be very useful," Quay says.

Another barrier to wider adoption is the general failure to distinguish the methodology from other, more familiar kinds of scenario planning, according to Carbonell of the Lincoln Institute. "When you say 'scenario planning' to most people in the planning world, they think of Envision Utah—the big regional vision plans that got people to agree on some preferred vision of the future," he says.

The intellectual "genealogy" of XSP traces back to the Global Business Network in the early 1990s, and its deepest roots lie in the scenario planning work of Royal Dutch Shell—which, as legend has it, produced very successful strategies, Carbonell notes. "The challenge is taking it out of the world of corporate planning and business strategy and getting participation by more than a few wonks," he says. "That's why working on the method, making it more accessible and efficient, is important."

Overall, the challenge remains to bring the methodology fully into the planning world. "I think we're primarily trying to do two things," says Carbonell. "We're trying to transfer a business planning model to a community planning model, so there are definitely differences in governance and the number of people to deal with. The other thing is scale, the size of the community and the area you deal with. Scenario planning has really come more out of the regional level."

The pertinent questions will be whether or not smaller-scale communities have the expertise, data, and willingness to participate; but ultimately it will be about whether XSP is "appropriate to the decisions being made," Carbonell says.

As exploratory scenario planning is used more often in regional and urban planning, further best practices will certainly emerge. And the methods of devising strategies in the final phase of XSP may vary from situation to situation. Summer Waters, program director of Western Lands and Communities, says, "The resulting strategies have to be politically acceptable. That is to say, the people we work with have to be able to convince their constituents to buy in."

Quay says the process leading to the production of scenarios through XSP has been largely "perfected" at this point. But there's work to be done on the final step of identifying actions that address multiple scenarios and formulating an appropriate strategy. "The problem is that distilling the strategic insights … has been different on all the projects I've worked on," Quay says. "There's both structure and art within it."

Avin, of the University of Maryland, agrees that some aspects of these powerful methods are still being worked out. But that's no reason, he argues, to delay their adoption. "XSP is not supported by tools and models in the way that visioning is supported," he says. But enough scenarios have been developed that planners can benefit from considering them and adapting them, rather than starting from scratch, he says.

For examples of parallel work in another field, experts note some of the advanced scenario work by the Transportation Resource Board and the associated software tool developed, Impacts 2050. Planners interested in more context and examples will find a diversity of deep sources in the Lincoln Institute's 2007 book *Engaging the Future*; the RAND Corporation's 2003 report *Shaping the Next One Hundred Years;* and Quay's 2010 article "Anticipatory Governance" in the *Journal of the American Planning Association*.

Exploratory scenario planning may have been slow to diffuse into the area of land planning, but its offerings are increasingly accessible and useful. "This is a fast-evolving field in terms of tools," Avin says.

In the 14th century, ancient Puebloans probably abandoned Mesa Verde, their c. 500 A.D. cliff dwellings—which are now a UNESCO World Heritage site and national park in Montezuma County—because of the sort of drought conditions that still challenge the region's tourism and agriculture industries. Credit: Durango Area Tourism Office.

John Wihbey is an assistant professor of journalism and new media at Northeastern University. His writing and research focus on issues of technology, climate change, and sustainability.

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Laurie Johnson is an internationally recognized urban planner who specializes in disaster recovery and catastrophe risk management. She is a visiting project scientist at the Pacific Earthquake Engineering Research Center at the University of California-Berkeley, chairs the U.S. National Advisory Committee for Earthquake Hazards Reduction, and serves on the steering committee of the Geotechnical Extreme Event Reconnaissance organization.

Robert Olshansky is professor and head of the Department of Urban and Regional Planning at the University of Illinois at Urbana-Champaign. His teaching and research cover land use and environmental planning, with an emphasis on planning for natural hazards. He has published extensively on post-disaster recovery planning, planning and policy for earthquake risks, hillside planning and landslide policy, and environmental impact assessment.

Over the years, Laurie and Rob have coauthored several publications, including *Opportunity in Chaos: Rebuilding After the 1994 Northridge and 1995 Kobe Earthquakes* and *Clear as Mud: Planning for the Rebuilding of New Orleans*. In this article, they discuss their collaboration and their work on a forthcoming Lincoln Institute book and Policy Focus Report, *After Great Disasters: How Six Countries Managed Community Recovery*.

50 Years of Disaster Recovery Planning

LAND LINES: **Together, the two of you have more than 50 years of experience working in the field of disaster recovery planning. What led each of you into this specialty?**

ROBERT OLSHANSKY: I have always been interested in the urban planning aspects of disasters—how to design cities to coexist with these forces, how to be more strategic and pragmatic in creating policies to reduce risks, and how to respond appropriately to natural events when they occur. But up until the mid-1990s, my focus was always on pre-disaster planning and policy.

All that changed after the twin January 17 earthquakes, in 1994 in Northridge, California, and in 1995 in Kobe, Japan. I was closely observing the recovery process in Los Angeles, when, on the first anniversary of the Northridge disaster, the Kobe earthquake provided a glimpse of what a truly large event could do to a modern urban area. A month later, I ran into Laurie Johnson at a conference, where we discovered common interests in learning from these two events, and my path was set.

I soon realized that recovery is, paradoxically, the most effective path for long-term hazard mitigation, because disasters increase awareness of natural forces and bring resources to bear on the problem. I also discovered that disasters provide planners with unusual opportunities for urban betterment. Conversely, if we are not prepared for these opportunities, we might find ourselves stuck with our new mistakes for years. As a planner, I see recovery as one of our profession's greatest challenges. It encompasses all the multidisciplinary complexities of our field, and provides some of our greatest opportunities to right past wrongs. But the process transpires in a compressed time frame amid considerable tensions and frustration, which makes it particularly hard to manage. Each new recovery situation is a multifaceted case study of its own.

LAURIE JOHNSON: Before Rob and I began collaborating, I studied geophysics and then urban planning. Shortly after graduation in 1988, I moved to the San Francisco Bay Area to work for William Spangle and George Mader, pioneers in land use planning for geologically hazardous areas. When the Loma Prieta earthquake struck in 1989, we became more actively engaged with Bay Area cities on post-disaster recovery and rebuilding issues.

With support from the National Science Foundation, we hosted one of the first-of-its-kind conferences on rebuilding after earthquakes, at Stanford University in 1990. Planners from cities prone to earthquakes across the United States came to learn from planners who led rebuilding efforts following some of the world's major urban earthquakes, in Skopje, Macedonia (then Yugoslavia, 1963); Managua, Nicaragua (1972); Friuli, Italy (1976); El Asnam, Algeria (1980); Mexico City (1985); and Armenia (1988). It was in those years that I became interested in rebuilding communities—and particularly in enhancing local government capacity to manage and lead post-disaster recovery.

LL: **Laurie, you have a doctorate degree in informatics from Kyoto University. Why did you decide to go there to study?**

LJ: I had tried to start work on a doctorate a couple of times earlier in my career, but in 2006 the stars finally aligned when Professor Haruo Hayashi invited me to join his disaster research center at Kyoto University. I was delayed again when I went to work on the post-Katrina recovery plan in 2006–2007. But it turned out that the New Orleans recovery experience offered an opportunity for a richer exchange with Japanese colleagues who had been deeply involved in Kobe's recovery. I initially hoped to compare the U.S. and Japanese approaches to large-scale disaster recovery management for my dissertation, but eventually settled on doing a comparative analysis of recovery management in three U.S. cities: Grand Forks, North Dakota; Los Angeles, California; and New Orleans, Louisiana. I really valued the opportunity to reflect on the U.S. approaches with my Japanese colleagues, who, coming from a different governance system, helped me to see many elements of conflicting policy and gaps that I may not have appreciated otherwise.

Fires blaze in Kobe on the morning of the earthquake on January 17, 1995. Credit: Ikuo Kobayashi.

Recovery is, paradoxically, the most effective path for long-term hazard mitigation, because disasters increase awareness of natural forces and bring resources to bear on the problem.

LL: **Rob, after Hurricane Katrina, you and Timothy Green conducted research for the Lincoln Institute on the Road Home Program, which dispensed more than $8 billion to New Orleans home owners to either repair their homes or sell them to the state. You found that residents in the worst-flooded areas were most likely to move away (see Green and Olshansky, "Homeowner Decisions, Land Banking, and Land Use Change in New Orleans after Hurricane Katrina," 2009). Do you know if that pattern, which suggests a very rational response to risk, has held up over time?**

RO: We did find that flood depth was the variable most correlated with the decision to sell and move. Home value, income, race, and years of occupancy were not significant factors, at least at the scale of our data. This is a positive finding in terms of flood policy, and it is certainly better than finding that flood depth had no effect at all on home owner behavior. But whether actual reconstruction patterns have changed is unclear, because the data are simply not available. Visually, however, the parts of the city with the least rebuilding are generally at the lowest elevations, where the most damage occurred. So, yes, this does appear to reflect a rational response to flood risk.

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But the reasons for that response may vary among different income groups. I suspect that many low-lying lots in the wealthier areas were subsequently acquired by buyers who built homes on them, whereas many lower-income owners who intended to rebuild were not financially able to do so. So the assertion that most people behaved "rationally" in the face of flood risk needs to be seen in a broader context. Furthermore, although flood depth was positively correlated with the decision to sell, the majority of home owners in the most flooded parts of the city—52 to 79 percent, depending on location—still opted to stay and rebuild.

LL: **What are the challenges faced by buyout programs like the Road Home Program and other relocation strategies aimed at avoiding repeated catastrophic losses?**

LJ: In the United States, the practice of post-disaster floodplain buyouts is fairly well established. Voluntary buyout programs typically target single-family homes that are more than 50 percent damaged by flood or within the Federal Emergency Management Agency's 100-year flood zone. But federal post-disaster funding streams, like FEMA's hazard mitigation grant program, also require that the buyout areas remain as open space or have some other nonoccupied use. Thus, if flooded communities have few available houses or infill opportunities, both rental and for-sale housing prices in the area may rise sharply and residents may decide to move away, creating a drag on local economies.

By their very nature, large disasters disrupt the physical, social, economic, and institutional systems of the communities affected. A major buyout program can create another wave of disruption that ripples through all these systems if it's not designed and managed properly. In normal times, these systems are not as stressed or tightly coupled, so the disruption caused by a land redevelopment or retreat project is typically not as acute as in post-disaster times.

Grand Forks, North Dakota, provides one of the better examples of comprehensive recovery planning and stewardship of both people and place. After the 1997 flood, the city worked with federal and state partners and the private sector to acquire land and install infrastructure and services for a new residential neighborhood on higher ground, and they gave priority to the buyout property owners to relocate there. This helped to keep residents in the community and stabilize housing prices. Grand Forks also partnered with its neighbor, East Grand Forks, Minnesota, as well as federal and state agencies, to aggregate more than 2,200 acres of land obtained through the buyouts and levee protection projects. Subsequent construction of a permanent greenway along the Red River has helped change the downtowns of both cities and their economies for the better. But I should emphasize that this

This neighborhood park, created through a large-scale land readjustment project in the Rokkomichi district of eastern Kobe, includes a community meeting center stocked with disaster supplies. Credit: Laurie Johnson.

transformation was by no means easy. It took over a decade to accomplish, requiring sustained leadership, collaboration, and support.

LL: **Laurie and Rob, the Lincoln Institute has been concerned for some years with two global forces: climate change and urbanization. Are climate events and urban development in hazardous locations likely to increase exposure to disasters? Are we prepared to deal with this?**

RO: Disasters, particularly in coastal areas, are a significant international problem right now, regardless of these driving forces. This is a present-day problem, not a future problem. Many of the world's most populated cities are ports on river deltas or estuaries, and many parts of these cities are below sea level. Many people also live on coastal barrier islands. Large storms strike each of these coastal areas several times each century, and after each storm we learn important lessons that we quickly forget. Meanwhile, cities worldwide are growing through both population growth and increasing urbanization. This makes the problem worse because more people are exposed, much of the urban growth occurs in the lowest places, and rapid, dense construction in many cities is of low quality. Although climate change exacerbates all of this, I would use climate change as the exclamation point to this argument rather than its starting point. So no, most places are not well prepared for either present-day storms or for the elevated number of coastal storm surges expected in the future.

LL: **The two of you have just finished work on a major research project for Lincoln based on case studies of disaster recovery in six countries. Tell us about the cases you selected and why you chose them.**

RO: We focused on recovery efforts in China, India, Indonesia, Japan, New Zealand, and the United States. The common thread is that these were extremely large disasters that severely affected urban areas, and they offer lessons that are relevant for other countries, particularly the United States. With the exception of China, the countries we focused on have democratic institutions, in which a variety of governmental

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and nongovernmental organizations participate in carrying out recovery. I was especially interested in cases of relocation, which are always difficult to accomplish in democratic societies. We chose the 2001 Gujarat earthquake in India both because of the land readjustment process and because of the widespread damage in rural areas similar in scale to the central United States. India is also of interest because its history of disasters illustrates a process of policy learning over time in a large and hazard-prone country. Indonesia is of interest for the same reason—it is probably the best example of rapid evolution of policy and practice as a result of learning from multiple disasters. In addition, the 2004 earthquake and tsunami in Banda Aceh, occurring in the midst of armed conflict, is one of the greatest disasters in modern history. At the time it occurred, we decided to investigate the Indian Ocean tsunami, because it provided an opportunity to view recovery efforts taking place simultaneously in several countries. In China, we were drawn to the immense scale of the 2008 earthquake in Sichuan Province and its relationship to ongoing processes of urbanization and land use change.

Bhuj's old walled city, devastated by the 2001 earthquake in the state of Gujarat, India, was reconstructed following a comprehensive planning and land readjustment process. Although the old center is less dense, it is still a vibrant urban area, and it is safer than before. Credit: Robert Olshansky.

Robert Olshansky and Laurie Johnson enjoy a moment of calm before the next storm, in 2014. Photo courtesy of the authors.

LJ: Rob and I had already written extensively about post-disaster recovery planning in many U.S. and Japanese cities. So, for this book, we decided to take a longer view of both countries' approaches to recovery management. In the United States, we look at the evolution of recovery policy following the World Trade Center attacks, Hurricane Katrina, and Hurricane Sandy—all of which involved considerable federal funding and a centralization of federal and state authority. For Japan, we look briefly at the rebuilding of Tokyo after the devastating earthquake and fire of 1923, which made an indelible mark on the country's disaster management philosophy and policy, and how that experience influenced the government's approach to funding and managing recovery from the 1995 earthquake and the 2011 earthquake and tsunami.

Our book also includes a look at disaster recovery in Christchurch, New Zealand, following the devastating sequence of earthquakes in 2010–2011 that caused repeated and widespread liquefaction, rockfalls, and ground subsidence.

Researching this case study brought me back to my original professional passion: land use planning approaches in geologically hazardous areas. New Zealand's government has taken a very active leadership role in the recovery, which provides a very good case for comparison with other national approaches that we describe.

LL: Drawing on these case studies, what are some of the key things planners and policy makers can do to better prepare for recovery after disaster strikes?

RO: In each of the cases, governments faced considerable uncertainty and had to balance the tensions between quickly restoring what was there before and deliberately creating betterment. Planners and policy makers need to reduce this uncertainty by finding funds, establishing clear procedures, streamlining bureaucratic processes, providing public information, and involving all stakeholders so that they can help inform good decision making and policy design. We provide several recommendations in the book that reflect a common set of principles: primacy of information, stakeholder involvement, and transparency.

LJ: Recovery after a major disaster is always complex and never fast enough for affected residents. However, the process can be improved by setting realistic expectations at the outset and by working to restore communities and economies quickly and equitably, empowering the full range of stakeholders—residents, businesses, land owners, insurers, utilities, and others—to participate in the process. In this way, governments can resolve preexisting problems, ensure governance for recovery over the long term, and reduce the risk of future disasters.

RO: Even better than smart recovery, however, is thinking ahead about strategies to manage future disasters. This is a good way to improve community resilience—the ability to survive, adapt, and recover from extreme events.

NEW LINCOLN INSTITUTE BOOK

A Good Tax: Legal and Policy Issues for the Property Tax in the United States

By Joan Youngman

THE PROPERTY TAX, A MAINSTAY OF LOCAL GOVERNMENT, is the subject of continual controversy, with numerous ballot measures to place caps on it—or in some cases proposals to eliminate it completely. But, in fact, it is a fair, democratic, stable, and efficient source of local revenue, argues attorney and property tax expert Joan Youngman in *A Good Tax: Legal and Policy Issues for the Property Tax in the United States*, published this month by the Lincoln Institute of Land Policy.

The property tax generates some $472 billion per year in local revenue in the United States, making it a critical source of funding for schools, police and fire protection, and other public services. It is also a highly transparent tax, holding local governments accountable to citizens, who can see clearly how their tax dollars are spent.

However, a series of populist revolts, beginning with California's Proposition 13 in 1978, have weakened the property tax and led to unintended consequences.

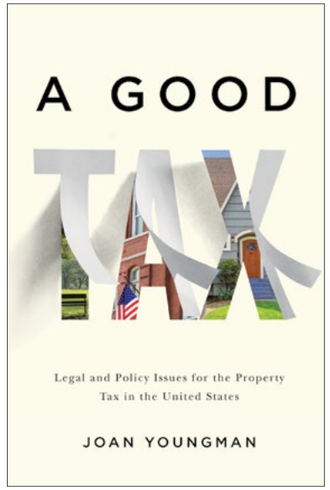
"Ironically, many property tax limitations enacted in the name of fairness have actually distorted the tax base and introduced inequities," Youngman says. "I hope this book will serve as a road map for a new path forward, helping policy makers strengthen the property tax as a fair, stable, and efficient source of local revenue and autonomy."

Through a comprehensive and detailed analysis of the legislative and administrative issues facing policy makers, Youngman outlines ways in which state and local governments can provide taxpayer relief, when necessary, while preserving crucial provisions of the property tax, such as the accurate assessment of every property based on the fair market value.

"At a time when many governments are facing fiscal difficulties and the need to address delayed or deferred financial obligations of all types, an effective property tax can be a valuable instrument for the common good," Youngman writes.

Joan Youngman is a senior fellow and chair of the Department of Valuation and Taxation at the Lincoln Institute. She is an attorney and author of *Legal Issues in Property Valuation and Taxation: Cases and Materials* (2006).

"At a time when many governments are facing fiscal difficulties and the need to address delayed or deferred financial obligations of all types, an effective property tax can be a valuable instrument for the common good."



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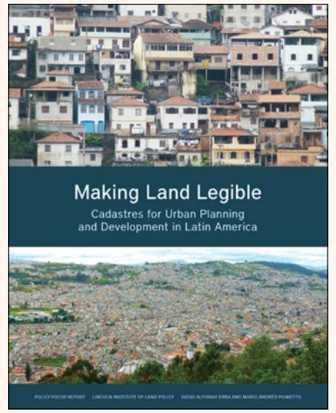
CONTENTS

NEW LINCOLN INSTITUTE POLICY FOCUS REPORT

Making Land Legible

Cadastres for Urban Planning and Development in Latin America

By Diego Alfonso Erba and Mario Andrés Piumetto



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THE TRADITIONAL TERRITORIAL CADASTRE—a public land registry typically used to track ownership and property taxation—is being reimagined throughout Latin America as a powerful tool to promote fiscal stability and to guide urban planning initiatives, such as building resilience in the face of climate change, according to this new report published by the Lincoln Institute of Land Policy.

Advances in technology and data crowdsourcing have made this new multipurpose cadastre possible, say Diego Alfonso Erba and Mario Piumetto, authors of *Making Land Legible: Cadastres for Urban Planning and Development in Latin America*. Cities in Colombia, Brazil, and other Latin American countries have successfully implemented the multipurpose cadastre and demonstrated its benefits to policy makers, write the authors, who are both veteran land surveyors with years of experience in research and practice in this burgeoning field.

In much of Latin America, cadastres are structured under the orthodox model imported from Europe long ago. This model has several limitations: it accounts only for economic, physical, and legal characteristics; it is typically restricted to private properties; much of the information may be out of date and incomplete; and it does not encompass key parcel-level data needed for urban policy decisions—such as information on transportation, infrastructure, and utility networks—which tends to be scattered in different formats among several disconnected institutions.

A multipurpose cadastre is based on a partnership of stakeholders committed to generating extensive, precise, detailed, and up-to-date information about a city. It shares alphanumeric data and maps as well as human and financial resources, and it can be implemented at the national, regional, or local level at reasonable cost. Unmanned aerial vehicles, or drones, equipped with cameras can be used to provide extensive information quickly.

A multipurpose cadastre is built within a spatial data infrastructure system. Its component parts are updated continuously with data obtained from urban observatories and other sources. Both systems can be implemented with free software applications

A multipurpose cadastre is built within a spatial data infrastructure system. Its component parts are updated continuously with data obtained from urban observatories and other sources. Both systems can be implemented with free software applications.

Orthodox land cadastres are implemented by public agencies using Geographic Information Systems (GIS) and updated with information from periodic surveys. In contrast, a multipurpose cadastre is built within a spatial data infrastructure system. Its component parts are updated continuously with data obtained from urban observatories and other sources. Both systems can be implemented with free software applications—one of the keys to the success of the multipurpose cadastre model.

Latin America is a unique testing ground, with vast uninhabited areas and extensive urban sprawl, the Amazon jungle and increasing deforestation, and tremendous wealth and crushing poverty existing side by side. Part of the legacy of colonization is a lack of accurate records that has enabled illegal land occupations to this day and strongly conditioned urban policies—particularly those related to tenure security and tax collection practices.

Although multipurpose cadastres do not define land policies, they are a key instrument for that purpose. The data integration provided by the model is the most direct way to identify and

monitor the economic, physical, legal, environmental, and social characteristics of parcels and their occupants. Planners need this information to manage the growth of cities, define strategies for financing urban development, reduce informality, and analyze the impact of government interventions. The information is also critical for disaster preparedness and adaptation to the impacts of climate change.

Making Land Legible: Cadastres for Urban Planning and Development in Latin America describes the evolution of cadastres and surveys communities that have adopted the multipurpose model and the benefits they have experienced. The authors also spell out best practices to facilitate a shift to multipurpose cadastres, including building land value observatories that involve the greatest number of partners possible; implementing assessment methods based on econometric and geostatistical models that can correlate assessment maps with the real estate market; mandating the georeferencing of parcels and requiring updated blueprints on each real estate transaction; and incorporating data on public properties and informal settlements in cadastre maps.

Diego Alfonso Erba is a land surveyor engineer specializing in cadastres and geographic information systems.

Mario Andrés Piumetto is part of the teaching faculty in the Program on Latin America and the Caribbean of the Lincoln Institute of Land Policy and professor at the School of Surveying at the National University of Cordoba, Argentina.

The complex urban reality in Zacatecas, Mexico, combines religious, commercial, historical, and residential land uses, all of which must be represented and registered in a territorial cadastre. © Diego Erba.

Joan Elise Rechtin Lincoln
1927–2016

Above: Joan and David C. Lincoln, photographed by Rhona Kasen in 1990.

THE LINCOLN INSTITUTE HONORS THE MEMORY OF JOAN ELISE RECHTIN LINCOLN, a renowned civic leader and ceramicist whose commitment to the arts and education remain an inspiration to all who knew her. Joan passed away at the age of 88 on March 7, 2016, at her home in Paradise Valley, Arizona. She is survived by her husband, David C. Lincoln, son of the Lincoln Institute's founder, John C. Lincoln; her children, Virginia Louise, Kathryn Jo, Carl Richard, and James Robert; and six grandchildren.

A longtime local leader, Joan was the mayor of Paradise Valley from 1984 to 1986 and served on the town council for 10 years. She also championed the arts, as an officer of the National Society of Arts and Letters, a member of the National Council for Education in the Ceramic Arts, and a member of the board of the Heard Museum in Phoenix.

An accomplished artist herself, Joan developed her lifelong passion for ceramics at Scripps College in Claremont, California. She earned a B.A. in art history there and later honed her talents with an M.F.A. in ceramics from Arizona State University. Joan spent many summers participating in the ceramics program at the Chautauqua Institution in western New York, where she was highly regarded as a teacher and mentor. "Much of Joan's activity involved ceramics, which she did well and was involved in from early childhood," recalls David Lincoln. "My wife was a people person, always striving to do the right thing in the right way, which served her well throughout life. She was a role model for all of us."

Joan and David shared a vision that ethical behavior and interfaith cooperation would solve many of the world's greatest dilemmas. With others, they helped to establish Claremont Lincoln University, known for an innovative graduate training that brings leaders and learners together to gain fresh perspective and develop the skills required to inspire meaningful and positive social change.

"My mother had a keen intellect and would always challenge us to ask the right question and do the right thing," says Kathryn Jo Lincoln, chair of the board and CIO of the Lincoln Institute.

"My mother had a keen intellect and would always challenge us to ask the right question and do the right thing," says Kathryn Jo Lincoln, chair of the board and CIO of the Lincoln Institute. "She was also very kind, and somehow, with my father, managed to raise four incredibly different children who each reflect her in our own way. We will sorely miss her."

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