Social Innovation and Smart Growth

How Social Entrepreneurs and Civic Innovation Can Affect Smart Growth in New Jersey

Prepared for New Jersey Future by Tim Schuringa

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About New Jersey Future

New Jersey Future is a nonprofit, nonpartisan organization that brings together concerned citizens and leaders to promote responsible land-use policies. The organization employs original research, analysis and advocacy to build coalitions and drive land-use policies that help revitalize cities and towns, protect natural lands and farms, provide more transportation choices beyond cars, expand access to safe and affordable neighborhoods and fuel a prosperous economy. Find out more at njfuture.org.

About the Author

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EXECUTIVE SUMMARY

Over the past few decades, a greater focus on accountability and impact has led to the emergence of the social enterprise, a new breed of organization that employs business strategies to achieve some social or environmental good.

Social entrepreneurs, like business entrepreneurs, are innovators who recognize an opportunity within the current equilibrium. They seek to disrupt the status quo through a creative solution to some social problem. While the business entrepreneur seeks to create private value, however, the social entrepreneur is primarily concerned with creating social value.

While many of the most innovative social ventures are start-ups, established non-profits and government bodies are also seeking to employ innovative solutions to pursue their social goals more effectively and efficiently.

The New Jersey Context for Innovation

Social innovation appears to be happening most in places known for business innovation, as talent, funding, and technology from the private sector are applied to solving social problems. New Jersey has a strong history of innovation, rooted in the earliest days of the telecommunications, chemical, and pharmaceutical industries. However, its position as an innovation leader has been slipping for several decades.

Innovation advocates in New Jersey point to a disconnect between higher education and industry as one major barrier to continued innovation, although the recent higher education bond and restructuring plan partially aim to address this problem. Funding is also a challenge for innovation in New Jersey, which lags significantly behind innovation leaders like California, New York, and Massachusetts in both venture capital funding and foundation grant-making.

Nevertheless, New Jersey has made several positive strides in recent years. Universities like Rutgers and Princeton have set up centers for entrepreneurship, and a number of innovative social service organizations are active in Newark, Jersey City, and other cities. State leaders have also sought to create an environment more conducive to social innovation, with the passage of benefit corporation legislation in 2011 and a recent effort to pass social impact bond legislation (currently awaiting Senate review).

Smart Growth and Social Innovation

Smart growth is the practice of making land-use decisions that result in an optimal set of outcomes for people, the environment, and the economy. By limiting sprawl development

and focusing on higher-density redevelopment, smart growth advocates seek to preserve farmlands and open space while creating more livable, vibrant cities, with access to adequate housing and employment and to a variety of transportation options.

While many social ventures to date have focused on direct services in areas like health, education, or employment, a number of new efforts have the potential to affect smart-growth outcomes. This paper explores four key areas of innovation related to smart growth:

- Crowdfunding
- Citizen engagement platforms
- "Open Data" and "Big Data"
- Financing tools for infrastructure and transit-oriented development (TOD).

Crowdfunding

Crowdfunding is the process through which funds for a project are solicited from a large number of individuals through an online platform. According to estimates from global accounting firm Deloitte, the crowdfunding sector is expected to reach $3 billion in contributions in 2013. The majority of crowdfunding to date has been used for private efforts, such as film or music projects, tech products, and books, and has typically employed sites like Kickstarter or IndieGogo. However, several new crowdfunding efforts have the potential to affect real estate development and civic projects.

Real Estate Crowdfunding

To date, the vast majority of crowdfunded projects have been contributions or product purchases, not equity investments, due in part to SEC regulations preventing equity investments from unaccredited investors. The federal Jump-Start Our Business Act (JOBS Act) of 2012 called for a loosening of these regulations, paving the way for more small-dollar equity investments in community real estate projects. Efforts like Fundrise in Washington, D.C., are pioneering a new model for crowdfunded real estate that seeks to create more local ownership, potentially leading to more unique development projects aligned with the community's long-term interests and fewer "cookie-cutter" projects.

Civic Crowdfunding

While crowdfunding sites like IndieGoGo can host community-based projects (meant to benefit the general public, not an individual or private company), until recently, no online platform existed specifically for funding civic projects. Now, companies like ioby and Neighbor.ly are facilitating crowdfunding efforts for projects like community gardens, crosswalks, and bike-share programs. Most of the new civic crowdfunding efforts recognize the special challenges that come with funding projects in public spaces (or with public matching dollars) and thus work closely with local governments

and community groups to vet projects thoroughly and gain necessary approvals before projects are posted to their website.

Citizen Engagement Platforms

A number of new online platforms seek to foster broader citizen engagement on a variety of topics, improving the feedback loop between citizens and their government. On topics ranging from local development decisions to city services, these websites and smartphone apps provide a place for residents to respond to proposals, generate new ideas, or take direct action to address a local problem. Among other things, these tools seek to ensure that planning decisions serve the interests of a much broader base of individuals—not just a few special interests or a handful of motivated individuals who show up at meetings. Examples of recent efforts operating in this space include MindMixer, Neighborland and OpenPlans, which all use online platforms to engage citizens on a variety of planning-related issues.

Open Data and Big Data

An explosion in the collection of digital public and private data over the past decade is creating new possibilities in sectors related to smart-growth. While virtually every sector and organization has been affected by the growth of digital data over the past decade—and the "open data" push for more timely and accessible public data—the changes in the real estate and transportation sectors are particularly relevant to smart growth. Walk Score is one company that uses data related to transportation and real estate. The company seeks to create a simple score for walkability and transit accessibility to inform consumer demand for more walkable, accessible, and higher-density real estate. Other groups, like Code for America, are providing technical assistance to cities as they try to employ computer and data-based solutions for a variety of municipal challenges.

Financing Tools for Infrastructure and Transit-Oriented Development (TOD)

With a faltering economy and long-overdue infrastructure repairs, many cities are seeking creative financing options for a variety of smart growth-related projects. These include more sophisticated user fee structures to fund transportation infrastructure (like congestion pricing and mileage-based user fees), value capture techniques, and public-private partnerships, like Chicago's new Infrastructure Trust, which seeks to leverage private dollars for public improvements. A variety of smart growth-related funds have also been created over the past decade, leveraging various combinations of private, foundation, and public dollars to acquire property needed for housing in transit areas or make equity investments in projects that advance smart-growth outcomes.

INTRODUCTION

Over the past two decades, the harmful effects of sprawl development have become increasingly clear. Poor development decisions have taken a serious toll on our health, pocket books, and quality of life, contributing to deteriorating infrastructure, urban disinvestment and environmental degradation.

Over the same period, the non-profit and public sectors have undergone major transformations. No longer content merely to "do good work," non-profit and public-sector practitioners have increasingly sought to adopt private-sector tools to develop more sustainable sources of revenue and to measure their impact. Foundations and individuals increasingly expect their contributions and tax dollars to result in tangible, measurable good, and non-profits and government bodies have been forced to think and operate more like businesses in order to thrive.

Out of this background, a new category of entrepreneur has emerged—organizations and individuals who understand the value of private markets, sustainable revenue, and quantifiable outcomes, but who are primarily interested in creating social value, not private profits.

This paper is an effort to look at some of these emerging players and trends and to put them in conversation with the world of smart growth. If there is one thing that the past few decades of smart-growth efforts have revealed, it is that no single tool can be effective in enacting the major shifts in land-use patterns that more sustainable development requires. Land-use plans working in isolation from—and sometimes in direct opposition to—private-market forces cannot be as successful as a holistic approach, where the latest innovations in both the public and private sectors are brought to bear on solving what is perhaps the greatest challenge of the coming century: *how can humans live sustainably*?

What are these latest developments? Which start-ups, partnerships, and public sector innovations have the potential to affect smart-growth outcomes in a positive way? The following chapters will provide a brief survey of the social innovation landscape, examining both how a selection of approaches might affect smart-growth outcomes and what additional constraints or challenges they may face.

1. Social Entrepreneurs and Social Innovation

Defining Social Entrepreneurship

While social entrepreneurship can take many forms, at its core it is an effort to change some "stuck system" through an innovation that disrupts the status quo in a positive way. To the social entrepreneur, the unacceptable status quo is a state of affairs that results in diminished wellbeing for a group of people. This could take the form of a health problem, environmental issue, educational shortcoming, or any other social problem.

Like the traditional private-sector entrepreneur, the social entrepreneur must identify an opportunity within the current situation, a creative solution that no one else sees. While the social entrepreneur often works within the private market to address the challenge, she distinguishes herself from the traditional entrepreneur in that she is primarily interested in achieving a social benefit, not profit. In other words, the social entrepreneur is concerned primarily with creating *social value,* while the business entrepreneur is primarily concerned with creating *private value.*

Characteristics of Successful Social Ventures

While social entrepreneurs come in many forms, five key factors define most successful social entrepreneurs:

- **INNOVATION** Social entrepreneurs must be creative—in their ability both to diagnose problems and to propose solutions. In this sense, a social entrepreneur can be distinguished from an administrator who merely manages well and applies best practices; the entrepreneur seeks to implement a new solution. The social entrepreneur does not necessarily need to invent something new, however; he may simply apply a concept from another context to his own context in a creative way.

- **SUSTAINABLE REVENUE** Social entrepreneurs often work within private markets to secure at least a portion of their revenues. Earned revenue is often an integral part of achieving lasting sustainability, as non-profits that rely solely on charitable donations or government grants can be vulnerable to shifting priorities or funding cuts. Foundation funding, government grants, and a

supportive policy environment remain key factors to the success of many social ventures, but tapping into market demand in innovative ways often allows social entrepreneurs to diversify their revenue streams and support future growth.

- **PERSISTENCE and ADAPTABILITY** Like traditional entrepreneurs, successful social entrepreneurs typically have a high tolerance for criticism, risk and failure. The first solution a social entrepreneur identifies to change the "stuck system" may not always be the best one, or it may require substantial tweaking. The most successful ventures are able to adapt their business models constantly as needed, and their leaders continually evaluate outcomes and modify their strategies accordingly.

- **IMPACT** Ultimately, the measure of success for a social venture is reaching a new equilibrium in the desired area. While continued revenues are often a sign that a social venture is achieving its goal (at least in the eyes of some funders), social impact—not profitability—is the ultimate test of a social venture's success. However, the difficulty of measuring social impact remains a major barrier to identifying and funding the most promising solutions to social problems.

- **SCALABILITY** Ultimately, to achieve a broad impact, social ventures must be able to grow beyond a pilot stage. A solution that only works within a limited context can rarely achieve the scale needed to change the desired equilibrium; a new model for redevelopment that only works in one city is probably not a new model at all, but simply the result of a skilled leader or other special circumstances. Scalability is directly related to impact.

Types of Social Enterprises

Social ventures can be organized in a number of ways, including traditional 501(c)(3) non-profits, LLCs, or corporations. Since social ventures often straddle the line between business and non-profit, some ventures set up both a business (to generate revenue) and a non-profit (to realize tax benefits, solicit charitable contributions, and achieve social good).

Alternatively, in a number of states, start-ups now have the option of setting up a "low-profit limited liability corporation" (L3C) or benefit corporation, new designations for social enterprises that exist primarily to achieve a social good. One major benefit of the L3C, a status currently held by more than 800 organizations across nine states, is that L3Cs are better positioned than businesses to qualify for program-related investments (PRIs) from

foundations.[1] So while an L3C does not experience the same tax benefits as a 501(c)(3), L3Cs can receive advantageous terms on loans in addition to the marketing and branding advantages that can come with being a social enterprise.

Just as L3Cs are the public-benefit version of LLCs, *benefit corporations* are state-recognized social enterprise corporations. Traditional corporations typically have a fiduciary obligation to maximize shareholder value, exposing social enterprises in some states to legal risk if they pursue a social mission over profits. As a result, achieving benefit-corporation status can be a helpful tool for social enterprise corporations to ensure that they are allowed to (and, in fact, required to) prioritize pursuit of their social mission over profits. To ensure some level of accountability, benefit corporations must produce public annual social impact reports to demonstrate that the organization is pursuing its social mission. More than a dozen states, including New Jersey, have passed benefit corporation legislation (New Jersey's legislation is discussed further in Section 2). Like L3Cs, benefit corporations do not yet receive any tax advantages, but benefit-corporation status can improve the organization's public image and help ensure the organization keeps a focus on its mission.

Somewhat confusing the matter, "benefit corporation" is also the term used to recognize organizations that have been certified as social enterprises by the non-profit B Labs (often, B Labs-certified organizations are called "B Corps," although state-recognized benefit corporations also use the abbreviation at times). B Lab certification carries with it some of the same marketing and branding advantages of state benefit-corporation status, but does not provide the same legal protections in most states. New Jersey currently has four B Corp certified organizations, including Natural Resource Utilities, a Hillsborough-based water infrastructure company that pursues social and environmental outcomes.

Examples of Social Entrepreneurs

Social enterprises come in a variety of forms and legal structures, and they operate across a wide range of sectors. The chart on the following page gives a few examples of social enterprises active in the fields of education, finance, housing, and international development.

[1] While foundations must donate 5 percent of their holdings each year, they have the option of making PRIs instead of donations. Foundations typically trade a lower return on investment for some social return (sometimes called an SROI, or social return on investment). If the investment goes well, the foundation achieves its mission, the funded organization pays the money back (at low or no interest), and the foundation can use that money to make another PRI. Impact investing from foundations and other funders is an important source of start-up capital for many social enterprises.

Name	Sector	Social Problem ("Stuck System")	Innovation
Khan Academy (Non-profit)	Education	Poor education outcomes, lack of access to quality education	By offering free, web-based instructional videos on a variety of subjects, Khan Academy seeks to provide "a free world-class education for anyone, anywhere." Khan Academy is currently supported by foundations, but with more than 10 million users, it has a number of options for diversifying revenue streams if needed.
Tom's Shoes (Business with non-profit affiliate)	International Development	Shortage of shoes in developing countries	Pioneered the "one for one" funding model, in which the purchase of one item (shoes, in this case) at market price pays for the donation of another item to an individual in need.
Grameen Bank	Finance	Lack of access to capital in low-income communities	Through Grameen Bank, Nobel laureate Muhammad Yunus developed a new model for small-dollar lending focused on peer accountability. Grameen Bank serves over 8 million borrowers and launched the field of micro-finance. Since the 1980s micro-finance has spread to dozens of countries and more than 100 million borrowers worldwide.
Enterprise Community Partners (For profit and non-profit)	Housing	Lack of sustainable, affordable housing	Having built over 300,000 homes in the past three decades, Enterprise has been a leader in the affordable housing movement. Like many social ventures, Enterprise has established a broad base of revenue, including public and private grants as well as revenue from loans.

Beyond a Strict Definition of Social Entrepreneurship

While social entrepreneurs are often responding at least in part to a failure in the public sector or private markets, many government entities and established non-profits are now embracing innovative strategies, by both partnering with social ventures and pursuing creative strategies in-house (analogous to establishing social-impact research-and-development departments). The

same can be said for existing non-profits, many of which are seeking ways to diversify revenue streams and achieve outcomes more efficiently.

While some researchers would like to make a firm distinction between true social entrepreneurs and traditional non-profits or government agencies that apply innovative strategies, the lines between different categories of social innovation are sometimes blurry. Indeed, many social ventures (such as Teach For America) depend upon contracts with established public-sector entities (school districts). Sometimes, established players and teams of individuals are the best source for creating innovative strategies—and some of the most innovative strategies have occurred through public-private partnerships.[2]

As a result, this analysis of trends that are affecting smart-growth outcomes will look beyond a strict definition of social entrepreneurship and include an exploration of innovative strategies regardless of their source. Most of the models and examples discussed will share the important characteristics of social entrepreneurs mentioned above, including a focus on innovative solutions, sustainable revenues, scalability, and impact.

Below are a few additional terms that will be used later in this report.

Social Innovation

Broader than the term "social entrepreneur," this catch-all phrase seeks to capture any new strategy capable of affecting a social or environmental problem in a positive way. Most government agencies and established non-profits are less risk-tolerant than the prototypical social entrepreneur, but they may nevertheless generate new strategies capable of changing social outcomes dramatically, even if that change tends to be more incremental in nature. While entrepreneurs typically launch start-ups in the private sector, social innovation can occur at any level, including the public sector or established non-profits.

Civic Start-Up

Reflecting the fact that more start-ups are working in the civic space, the term "civic start-up" has emerged over the past few years to capture the new breed of social ventures working directly with city governments and other public entities to achieve social goals. The term has specifically been used in conjunction with app developers who create useful data tools for cities (discussed further in sections 5 and 6).

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[2] In his book *Where the Good Ideas Come From: The Natural History of Innovation*, Steven Johnson argues that people often romanticize the concept of the tortured, "lone wolf" innovator, falsely assuming that most creative solutions come from an individual "burst of genius." In reality, he argues, most innovations of the past century came from networks of people working together, not individuals. They also often come from the public sector, not just the private sector.

Double and Triple Bottom Lines

The ultimate measure of success for most businesses is profit, often referred to as the "bottom line," a reference to the last line of a profit-and-loss statement. For social enterprises, however, the focus on social returns in addition to profit means that social enterprises have a "double bottom line"—profit and social impact. Additionally, the term "triple bottom line" refers to social ventures that also pay special attention to environmental outcomes. This three-pronged framework is sometimes called the "people, planet, profit" framework.

2. The New Jersey Context for Social Innovation

Overview

Perhaps not surprisingly, social innovation in the United States appears to be happening most in the cities known for business innovation. Many of the start-ups and civic innovations featured in this paper are based in hubs known for their creativity and supportive climate for technology-based start-ups, including San Francisco, Silicon Valley, New York City, Seattle and Boston. While business innovation does not necessarily lead to social innovation, social innovators often utilize the talent, funding, and technology from the private sector to further their social missions.

New Jersey has a strong history of innovation, rooted in the earliest days of multiple industries, including telecommunications and electronics (Bell Labs, RCA Laboratories), chemicals (Union Carbide, Esso Research), and pharmaceuticals (Johnson & Johnson, Merck, Bristol-Myers Squibb). By the mid-1960s, New Jersey ranked fourth in total research-and-development expenditures nationwide and was responsible for 60 percent of total chemical production and 22 percent of pharmaceutical production.

While New Jersey still consistently ranks as one of the top five states for innovation as measured by the number of patents filed per capita, its position as an innovation leader has been slipping for several decades. Twenty years ago, New Jersey was home to one in five pharmaceutical jobs in the country; today, New Jersey has only one in 10, as companies have shifted operations to biotech hubs in Massachusetts, California, and overseas. Perhaps more relevant to the world of social innovation, which has benefited from funding, talent, and ideas coming from the technology sector in recent decades, New Jersey has failed to establish itself as a hub for software and computing innovation in the way that Silicon Valley, San Francisco, and Seattle have (although the state has experienced a hopeful uptick in tech jobs over the past year).

Innovation happens within a broader ecosystem, including a region's geography, people, higher education, funding, and policy context. While New Jersey faces a number of challenges going forward, it has made some important strides in recent years on the innovation front. In addition to some of the positive policy and higher education developments discussed below, the last decade has seen the development of a number of successful innovative social service organizations, social investment funds, and mission-focused start-ups in Newark, Jersey City, and other cities. Several New Jersey innovators have received national attention for their

work, including Tom Szaky, founder of environmentally-focused start-up TerraCycle in Trenton, who was named as one of *Forbes* top 30 social entrepreneurs of 2011.

Geography

While researchers have long noted that cities are generally more efficient as they get larger (thanks in part to economies of scale achieved through energy and transportation infrastructure), physicist Geoffrey West of the Santa Fe Institute found that larger cities, on average, are also more productive and innovative.[3] Unlike other efficiency gains, which improve at a diminishing rate as cities get larger, measures of productivity and creativity appear to increase exponentially, with an 11 percent increase for every doubling of population.

For New Jersey, composed mainly of smaller towns located within a densely populated state, this phenomenon poses some interesting challenges. While only two New Jersey cities have populations greater than 200,000 (Newark and Jersey City), New Jersey as a whole is the most densely populated state in the country, and is sandwiched between Philadelphia (fifth most populous city) and New York City (most populous city). While New Jersey may face an uphill battle when it comes to reproducing the unique characteristics of larger, creative urban centers, its overall density and its proximity to New York City suggest that with better networking and connectivity, New Jersey can realize more of the productivity and innovation benefits associated with larger, higher-density urban centers.[4]

In addition to affecting overall productivity measures, size also affects a city's ability to attract and retain talent (discussed below) and the resources available to local government. While larger cities can research innovative tools for funding, planning, or community engagement—or fund entire civic innovation departments—smaller cities may be able to devote little or no time to implementing and supporting many of the tools discussed in this paper. As a result, state-level support, regional collaboration, and support from non-profits and private-sector partners will likely be crucial for more New Jersey municipalities to incorporate best practices tested in larger markets.

People and Education

When it comes to fostering an ecosystem for innovation, the size of a city is only one component. Attracting and retaining new talent has also been a key ingredient to innovation

[3] It is worth noting that West also finds negative forms of "productivity" increase exponentially as well, including crime and STD rates.

[4] Follow-up research on this topic focusing on social networks in cities found that the number of social interactions and size of people's social networks increased exponentially with population size, potentially explaining part of the reason for increase in productivity as cities get larger. Notably, these trends did not hold true in many developing countries and Eastern European cities with poor infrastructure. Researchers posited that poor transportation infrastructure effectively cuts people off from other parts of a city, reducing social network size and negating the productivity gains usually seen as cities get larger.

success stories across the country. Higher education has played a pivotal role in places like Silicon Valley and Massachusetts in both attracting and developing talent and facilitating the research and private-sector partnerships needed to support industry growth. While no one has been able to replicate the success story of Silicon Valley and Stanford University, the cities known for innovation in recent decades have all forged successful partnerships between research universities and the private sector.[5] Ultimately, these environments have also proven the most fertile for spurring social innovation, as the capital from the private sector—human, intellectual, financial—is applied to addressing social problems.

Innovation advocates in New Jersey point to a disconnect between the private sector and higher education as one major gap in New Jersey's innovation ecosystem. Ironically, New Jersey's history as an innovation leader may be partly to blame for the disconnect, as a number of established industries were able to rely primarily on internal research-and-development efforts throughout much of the last century. "There was little need for R&D support from New Jersey's government or its academic community," said Melanie Willoughby, co-chair of the public-private coalition Innovation NJ, in a recent press release. "Thus a chasm grew between industry and higher education in New Jersey." While several business leaders in the 1960s recognized this shortage of collaboration as a threat to industry's future talent needs, efforts led by Bell Labs to create an elite research university with close industry ties, modeled after Stanford and Silicon Valley, ultimately failed.[6]

The importance of higher education to local industry is evident in the current state of New Jersey's pharmaceutical industry, according to James Hughes, dean of the Edward J. Bloustein School of Planning and Public Policy at Rutgers. Asked by reporters about the cause for the recent decline in New Jersey's pharmaceutical jobs, he pointed to the disconnect between industry and higher education, as well as a shortage of biotech research universities in New Jersey. "Pharma is putting its cutting-edge facilities near university centers of excellence in the life sciences, such as Cambridge, Bay Area, San Diego, etc.," said Hughes, in a recent interview with reporters. "They want to be in interactive environments, not in insulated suburban facilities."

New Jersey's recent efforts to restructure its public universities and invest in expanded research capacity should help the state make up some ground lost to California, Massachusetts, and New York, but these investments are long overdue. New Jersey has

[5] The 2012 New Jersey Future report, *Innovation Districts as Economic Growth Strategy*, highlights some of the efforts in Boston, New York City, and elsewhere to spur more innovation by creating districts that foster broader collaboration among research universities and public- and private-sector partners.

[6] A detailed account of this early effort to replicate the successes of Silicon Valley in New Jersey is available in the 1996 paper, *Selling Silicon Valley.* (See Sources for full citation).

experienced two decades of higher education funding cuts in real dollars per student,[7] and the $750 million bond approved in 2012 by voters was the first public higher education bond in 24 years. New Jersey also leads the nation in college student exports, losing 28,000 more high school graduates each year than it attracts at in-state colleges and universities, making it harder to retain the talent needed to support industry growth.

In addition to the recent efforts to improve higher education, other positive signs for New Jersey's innovation ecosystem include recent efforts at Rutgers University to foster more social innovation, with the creation of the New Jersey Social Innovation Institute at the university's Center for Urban Entrepreneurship & Economic Development. Princeton University's Kelly Center has also sought to foster a stronger climate for entrepreneurship and innovation over the past decade by exposing engineering students to real-world problems and creating partnerships with the public and private sectors.

Funders

While the goal for many social enterprises is to achieve financial sustainability, most require start-up capital from investors or ongoing subsidies from foundation partners. Here, again, New Jersey finds itself at a significant disadvantage compared to states like California, New York, and Massachusetts, which attract the majority of venture capital in the United States (in fact, California alone attracts more than half of all venture capital in the nation). Venture capital in New Jersey has experienced a steady decline over the last decade, peaking in 2004 at just under $1 billion and decreasing each year since then. New Jersey venture capital funding in 2012 was only $429 million, just 1/7 of the $3 billion attracted in the same year by Massachusetts, which has 2 million fewer people than New Jersey.

New Jersey also faces a shortage of foundation funding. California and New York are home to 40 of the 100 largest foundations by asset size. While New Jersey is home to a number of dynamic mid-sized or small foundations, only one (Robert Wood Johnson Foundation) ranks in the top 100 by asset size. According to 2009 data from the Foundation Center, New Jersey ranked 36th in per-capita foundation dollars received, with $35 received per person. By comparison, California, New York, and Massachusetts all rank in the top 10, with $79, $154, and $168 received per capita, respectively.

Public funding also plays a pivotal role in supporting innovation through government grants, contracts, and support for basic and applied research. While Stanford's pivotal role in Silicon Valley's growth is undeniable, defense contracts funded much of the early growth in the

[7] Since 1991, New Jersey has seen large cuts to state and local support for higher education. According to a 2010 report by The New Jersey Higher Education Task Force, New Jersey saw a 10.8 percent cut in inflation-adjusted funding per full-time equivalent student from 1991 to 2004. From 2004-2009, support was cut by another 18.7 percent, the third-highest cuts of any state in the country.

decades following World War II, creating thousands of attractive, stable jobs and laying the groundwork for the private semiconductor industry, software companies, and web-based startups that followed in the coming decades. While many of the innovations discussed in this paper focus on leveraging private-sector funding or ideas to achieve a public good, it is worth noting that the public sector also plays an important role in creating an ecosystem for innovation.

State Innovation Policy

In addition to affecting social innovation indirectly through their support for higher education, research, and business innovation, states around the country are also seeking to support social innovation directly, by creating a legal structure for social enterprises and facilitating more public-private partnerships. Two efforts along these lines in New Jersey include the NJ Social Innovation Act and the 2011 Benefit Corporation legislation.

Benefit Corporation Legislation

In early 2011, New Jersey became the fourth state to pass benefit-corporation legislation. As described in Section One, benefit-corporation legislation provides a legal status for social enterprises that wish to prioritize achieving some social or environmental good over making a profit.

However, in the time since the legislation was passed, few organizations have sought benefit-corporation status in New Jersey. Alberto Larotonda, founder of New Jersey's first benefit corporation, argued recently in *The Times* of Trenton that New Jersey has done little to promote the benefit-corporation legislation, leaving many businesses and legislators unaware of the new designation.

While state legislation can provide a more welcoming environment for start-ups, legal designations like L3Cs and benefit corporations are still new developments, and it is not year clear how large an effect these new categories will have on social enterprises.

NJ Social Innovation Act

Promoted by Asm. Angel Fuentes, the NJ Social Innovation Act would pave the way for New Jersey to implement its own social impact bond program. Social-impact bonds, also known as "pay-for-success" programs, pay private investors when initiatives in which they invest achieve specific social outcomes. In this model, non-profit service providers receive funding from private investors to administer innovative programs. Investors are paid back, with interest, by the government if the desired outcomes and cost-savings are achieved. Social-impact bond programs have been piloted in Massachusetts and New York, with efforts aimed at reducing recidivism rates in the criminal justice system. The New Jersey effort will focus on reducing emergency-room visits with innovative health-care programs. While critics of pay-for-success

programs fear that privately-run programs will supplant government programs, proponents argue that social impact bonds provide a low-risk way to implement innovative social programs that would be difficult to run through traditional channels.

While social impact bonds have been used for social services with little direct connection to smart-growth outcomes so far, the Social Innovation Act could strengthen the ecosystem for social enterprise in New Jersey by attracting more interest from funders and innovative non-profits. It is also possible that social impact bonds could be applied to sectors beyond criminal justice and health as the tool evolves. The NJ Social Innovation Act passed the Assembly in March of 2013 and is awaiting approval by the Senate.

3. Affecting Smart-Growth Outcomes Through Social Innovation

Definition

Broadly speaking, "smart growth" means making land-use decisions that result in an optimal set of outcomes for people, the environment, and the economy. Smart growth as a field has developed over the last 40 years, largely in response to the suburban sprawl that accelerated throughout the second half of the 20th century. Today, advocates at the local, state, and federal levels work with policy makers and smart growth-friendly developers to forge a future of more sustainable, livable cities. In the wake of Hurricane Sandy, the need for careful, sustainable planning is more relevant than ever for New Jersey.

In exploring the degree to which innovative strategies are capable of fostering smarter growth, a recurring question will be the degree to which a new model is scalable and capable of producing the desired smart-growth outcomes. While the purpose of this survey of recent trends and innovations is not to detail those desired outcomes, it will prove helpful to keep in mind the following 10 smart -growth principles, developed by the Environmental Protection Agency and widely used throughout the smart growth sector in North America. Following each principle is a one- or two-word summary for the objective, which will be used in the pages that follow as an abbreviation for the relevant objective.

Smart Growth Objectives

1. Mix land uses (mixed-use)
2. Promote compact building design (higher density)
3. Create a range of housing opportunities and choices (adequate housing)
4. Create walkable neighborhoods (walkability)
5. Foster distinctive, attractive communities with a strong sense of place (sense of place)
6. Preserve open space, farmland, natural beauty, and critical environmental areas (environment)
7. Strengthen and direct development towards existing communities (redevelopment)
8. Provide a variety of transportation choices (transportation)
9. Make development decisions predictable, fair and cost effective (equity)
10. Encourage community and stakeholder collaboration in development decisions (community engagement)

Some of the innovative models explored here may lend themselves to affecting these objectives in a positive way; others may be neutral developments that could either advance or undermine smart-growth objectives depending on who utilizes the innovation and how.

This overview is not meant to be an exhaustive inventory of innovations capable of affecting smart-growth outcomes. For example, innovations in housing—one of the sectors where creative public-private partnerships were first widely used to achieve social goals—is not covered. This paper focuses on four major categories: crowdfunding, community engagement, open data, and financing tools for infrastructure and transit-oriented development. In each of these four sections, an overview of the innovation and some of the key players will be followed by a brief exploration of its possible constraints and weaknesses.

4. CROWDFUNDING

Real Estate Crowdfunding

Potential to Affect the Following Smart-Growth Objectives:
Mixed-use, sense of place, redevelopment, equity, community engagement

What it is

Over the past several years, online start-ups like Kickstarter and IndieGoGo have established the new field of crowdfunding, where individuals can contribute money to fund a variety of projects, ranging from films to tech products. To date, however, SEC regulations have largely prevented small-dollar investments in businesses; Kickstarter contributions are donations or product purchases, not equity investments. However, the JOBS Act of 2012 allows individuals to invest up to 5 percent of their income or net worth in private firms, such as real estate LLCs.

> *"There should be a model where neighborhoods come together and actually own commercial real estate."*
>
> *-Ben Miller*
> *Founder of Fundrise*

How it could be disruptive

Real estate development is often funded by outside investors primarily interested in creating private value (return on investment). By making it easier for local community members to invest in projects, real estate crowdfunding has the potential to produce more projects that meet the long-term best interests of the community. Rather than focusing exclusively on profit, local residents might be willing to accept a lower rate of return in exchange for funding a local book store or restaurant that matches the character of the community; these smaller-dollar investors might earn a smaller-dollar return on their investment, but they would also receive a "social return" in the form of a more livable neighborhood. At scale, this new model could affect the way development is done, keeping more local dollars inside communities and increasing residents' ownership stake in their neighborhoods.

How it could affect smart-growth outcomes

Allowing community members to fund projects collectively could lead to more "double bottom line" investments in communities, creating not just a profit but social value as well. Quoted in a recent *New York Times* article, Ben Miller, founder of new crowdfunding effort Fundrise, argues that a narrow focus on profits for outside funders often leads to "cookie-cutter projects and strip malls anchored by chain stores" rather than unique, mixed-use development. If enough local residents have a real ownership stake in their communities, development decisions could become more about improving neighborhoods and less about

extracting maximum profit from each project. For local investors, part of the "return" on a project comes from its contribution to their quality of life and the value they derive from a project that aligns with their vision for their community.

Key players

Fundrise A branch of Washington, D.C.-based real estate investment company WestMill Capital Partners, Fundrise was founded in 2012 in the wake of the 2012 JOBS Act. By selling shares for as little as $100, Miller's company has facilitated several mixed-use redevelopments along Washington, D.C.'s H Street NE. Miller hopes that finding a broader base of local investors will allow for more unique, mixed-use development and fewer "cookie-cutter" projects.

Prodigy Focused on the United States and Colombia, Prodigy is the name of a crowdfunding real estate investment platform launched by real estate investment company Prodigy Network. Unlike Fundrise, Prodigy has been focused mostly on larger-scale commercial real estate development, but they have shown more interest in place-based development in recent years.

➢ *A 6,500 square foot redevelopment project on H Street in Washington DC. The project is one of several DC projects listed by Fundrise and has a funding goal of $350,000.* Photo: Fundrise

Going Forward: Constraints and Next Steps

A broader base of funding does not necessarily guarantee that developments will be more in line with smart -growth principles. While Fundrise appears to be focused on the potential for crowdfunding to create social value, other start-ups in the sector (such as Realty Mogul) appear to be selling potential investors on profit alone, which could lead to more generic, short-sighted development—not to mention the exploitation of unsophisticated investors lured by the promise of double-digit returns.

The SEC has not yet finalized regulations allowing widespread crowdfunding, and it is not clear when the changes will be completed. As a result, groups like Fundrise must currently register each project with the SEC so that unaccredited investors can buy shares. It remains to be seen if real estate crowdfunding is scalable, if it will actually lead to more mixed-use development, and if it can be successful in smaller or struggling markets. So far several states of (including Georgia and Kansas) have developed intrastate exceptions to laws banning unaccredited investors; if the SEC continues to delay regulation changes, other states may consider following suit.

Civic Crowdfunding

Potential to Affect the Following Smart-Growth Objectives:
Walkability, sense of place, redevelopment, equity, community engagement

What it is

While Kickstarter has made headlines in recent years by creating a funding platform for tech products, films, and other private ventures, until recently no comparable platform existed for funding civic projects, where hundreds or thousands of users could combine resources to fund local projects that serve the public good. Over the past two years, several players have emerged in the field of civic crowdfunding. This new breed of crowdfunding start-ups works with community members and local leaders to fund everything from community gardens to parks to public transit pilot projects.

How it could be disruptive

As with crowdfunding for businesses and real estate, it still remains to be seen if this type of funding platform can scale to a significant level. However, global accounting firm Deloitte estimates that the crowdfunding sector as a whole will reach $3 billion in 2013, with $500 million going towards projects with no physical return for the contributor. If civic crowdfunding experiences similar growth, it could comprise a significant source of funding for implementing a variety of public projects, at a time when many public budgets are being stripped down to bare essentials.

"The only people who go to planning meetings want projects to stop."

-Andrew Teacher

Founder, Spacehive

While online crowdfunding is a new development, innovative funding models for public spaces are not a new phenomenon. According to its most recent annual report, KaBOOM! has leveraged local volunteers and $200 million of funding from a variety of businesses and individuals to build or improve over 12,000 playgrounds. Employing more low-tech means, KaBOOM! has demonstrated that it is possible to leverage significant private dollars to improve public spaces.

How it could affect smart-growth outcomes

Civic crowdfunding has the potential to improve livability in cities both by funding projects directly and by demonstrating broad community support for projects that may not yet have sufficient political support. While most projects funded to date have been smaller, including projects like bike-share programs, green spaces, or streetscape improvements, the civic crowdfunding field is still very much in its infancy.

Key players

Spacehive Launched in March of 2012, London-based Spacehive promotes itself as the "first funding platform for civic projects." Spacehive's staff of six works closely with community groups and public bodies to ensure that projects are fully vetted and viable before they are posted online. They have also demonstrated that larger projects can be supported through this model, bringing in some of the final dollars needed to complete a £791,000 ($1.2 million) community center in Wales, funded primarily with public dollars.

"We want to make it easier for local governments to focus on core services without sacrificing quality of life."

-Jase Wilson

Founder, Neighbor.ly

Neighbor.ly Inspired by Spacehive, Neighbor.ly is a civic crowdfunding effort of Kansas City-based LLC Luminopolis. Through Neighbor.ly, local governments or non-profits can sponsor projects and solicit donations from individuals and corporations. While Neighbor.ly focused initially on Kansas City projects (including an effort to launch a new streetcar service and more than $120,000 towards a bike-share program), in recent months the site has started to expand its reach to other cities, including a $350,000 playground effort in Morris County, N.J.

ioby (acronym for "in our backyard"). ioby is another new online hub for crowdfunding projects in public spaces. Started in New York, ioby is a non-profit that features projects in more than a dozen states. Most of the 180 projects listed on the site are small (under $10,000), such as community gardens and recycling programs, and have an environmental as well as social focus. Erin Barnes, co-founder of ioby, sees ioby as more than a crowdfunding site; the organization seeks to spur neighborhood-level change by working with community-based organizations and local volunteers. Unlike Neighbor.ly, ioby is a non-profit, making most project contributions tax-deductible. ioby has received start-up grants from foundation partners, but Barnes hopes to support a growing portion of ioby's operating costs through a voluntary 20 percent "gratuity" that contributors can add to their online donation.

Going Forward: Constraints and Next Steps

For larger-scale projects, funding is only one small part of completing a project. Regulations, the need for municipal approval, and a number of other factors can also prevent projects from seeing daylight. In recognition of the complicated nature of many civic improvements, start-

ups in this sector must work closely with local groups and public bodies to ensure that, before appearing on their crowdfunding websites, projects meet a basic threshold of local support. Indeed, some projects are explicitly sponsored by city governments. However, the extensive groundwork required to support many civic projects raises the question of whether civic crowdfunding can scale to a meaningful level; while Spacehive and ioby have nearly 400 projects listed between the two of them, fewer than 100 have been funded to date.

Some critics also point to equity concerns with crowdfunding efforts as more private dollars are used to fund public projects. If private funding supplants public dollars for certain projects, support for taxes could be eroded even further, exacerbating one of the problems that crowdfunding is meant to address. Cities can avoid this problem by using crowdfunding to support innovative projects and pilot projects that might not have otherwise warranted use of public funds. Additionally, as both Spacehive and Neighbor.ly have demonstrated, cities can use these funding platforms to stretch public dollars further or to fund higher-risk projects that may not have been feasible with public dollars alone. However, matching private contributions with public dollars could redirect public dollars to wealthier neighborhoods, which may be better positioned to secure private contributions.

5. Citizen Engagement Platforms

Potential to Affect the Following Smart-Growth Objectives:
Community engagement, equity, and others indirectly

What it is

Just as crowdfunding start-ups seek to broaden the base for investing in projects, a wave of new online platforms seek to foster broader citizen engagement on a variety of topics. From local development decisions to city services, these websites and smartphone apps cater primarily to government agencies and advocacy groups, providing a place for residents to respond to proposals, generate new ideas, or take direct action to address a local problem. These efforts are a key part of the so-called "Government 2.0" movement, focused on using technology to forge better connections between citizens and their governments. This section will examine tools focused primarily on engaging community members, while the following section, "Open Data and Big Data," will focus on ways that access to more data is shaping consumer behavior and public- and private-sector decision-making.

How it can be disruptive

While recent efforts to crowdsource information from citizens more effectively can be seen as a natural evolution of the e-government movement that began in the late 1990s, the current phase of innovation is about much more than digitizing forms and allowing citizens to pay taxes online. Nick Bowden and Nathan Preheim, cofounders of civic engagement platform MindMixer, believe that the right strategy and online platform can fundamentally change the nature of the dialogue as it relates to development decisions in cities— in terms of both whose voices are heard and the quality and timing of the feedback.

> *"We saw the existing model for civic engagement was broken, largely because it provided only one option for engagement."*
>
> *-Nick Bowden & Nathan Preheim Cofounders, MindMixer*

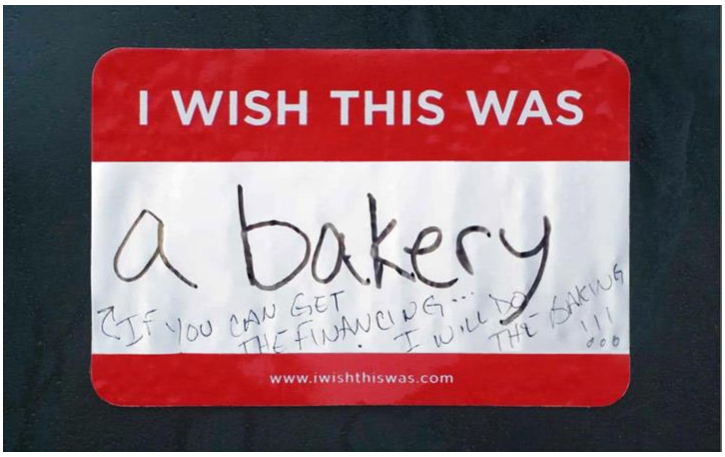
How it can affect smart growth

Like some of the key players in the real estate and civic crowdfunding fields, several start-ups in this area hope to create a fundamental shift in the way that planning and development decisions are made at the local level. These efforts seek to establish multiple lines of communication related to public issues—among and between citizens, advocates, businesses, and governments. While broadening the amount and quality of citizen engagement may not lead inevitably to smart-growth policies, new online organizing platforms hold the promise of an era in which planning decisions serve the interests of a broad base of individuals—not just a few special interests or a handful of motivated residents who show up at meetings.

Key Players

MindMixer Launched by two former urban planners in 2012, Omaha-based MindMixer seeks to create a virtual-town-hall experience in which citizens can share their ideas and collaborate. MindMixer's primary customers have been city governments and public-education entities, but MindMixer may expand to other organizations in the near future. Over the past 18 months, the organization has received $6 million of support in two rounds of funding. The funding has enabled it to target an ambitious growth plan (1,000 customers by the end of 2013) and acquire VoterTide, a social media company that will help MindMixer analyze social media trends in communities. MindMixer leadership claims that over 800,000 individuals have participated in 400 communities to date, contributing to projects ranging from pocket park development to crosswalk creation and downtown redevelopment.

Neighborland This citizen collaboration model was inspired by a simple concept: artist Candy Chang placed stickers with the words "I wish this was..." on abandoned buildings in New Orleans to get people talking and thinking about possibilities for redevelopment. That concept matured into Neighborland, a company promoting an online community collaboration model focused on the "economic and social development" of cities. Now based in San Francisco and propelled by $1.2 million of Silicon Valley investment, Neighborland has expanded its model to Houston and to Boulder, Colorado.



- *One of the "I wish this was..." stickers that inspired the launch of Neighborland. The online platform seeks to inspire more robust two-way interactions as residents share their vision for their community.*

Source: candychang.com

New Urban Mechanics While New Urban Mechanics promotes a broader array of "civic innovation" tools, many of its strategies focus on so-called "participatory urbanism" projects, which seek to leverage broader citizen engagement to improve city services and planning. Housed within a city's government, New Urban Mechanics was pioneered in Boston and has since spread to Philadelphia and sparked interest from several other cities. Efforts like Citizens Connect (inspired by SeeClickFix), Neighborhow and Textizen make it easier for users to provide feedback on city services and maintenance issues or report dangerous intersections, through smartphone apps and text messaging tools. By creating separate offices for innovation within city government, cities like Boston and Philadelphia are trying to improve the public sector's reputation for innovation and responsiveness.

OpenPlans Founded in 1999 by Mark Gorton, the creator of file-sharing software LimeWire, OpenPlans is a non-profit organization that seeks to address transportation and planning problems by facilitating community engagement across a range of issues. In addition to helping city governments solicit input from a broader base of citizens, OpenPlans uses a variety of data-based tools to enable broader action related to transit and planning issues. These include educational films about livable streets and map-based public input tools. While OpenPlans has worked mostly with larger cities (it is based in New York City), it received support from the Knight Foundation in 2013 to develop more accessible web-based planning tools for smaller cities.

> *"We don't want urban planning to just be for big cities. We want these tools to be accessible to all sorts of municipalities."*
>
> *-Aaron Ogle*
>
> *Software Developer, OpenPlans*

Going Forward: Constraints and Next Steps

It still remains to be seen if a broad array of new citizen-engagement tools will result in a fundamental shift in the way planning and development decisions are made. While proactive, progressive city governments and advocacy groups are using these new technologies to engage a broader cross-section of citizens, substantive community engagement still requires considerable on-the-ground resources in most cases. Furthermore, the same technologies that will enable smart-growth advocates to organize more effectively can be used by special interests to promote counterproductive policies.

6. Open Data and Big Data

Potential to Affect Smart-Growth Objectives:
Walkability, high-density, mixed-use, and transportation

What it is

Over the past decade, the amount of public- and private-sector data has exploded, fueled by improvements in computing power and storage capacity, as well as the broader adoption of technologies that leave data trails (social media, electronic record-keeping and electronic transactions, to name a few). Spurred by early efforts in Washington, D.C., and San Francisco and a federal directive in 2009, government bodies are increasingly making their data more broadly available to the public through a single, accessible portal—a movement called "open data."[8] A related term, "big data," refers to the explosion of large, complex data sets (both public and private) made available by recent technological advances.

How it could be disruptive

The wealth of new data is affecting virtually every sector—from education, health, and energy to retail, finance, and manufacturing. Within this evolving data landscape numerous opportunities have emerged for developing new apps and analytical tools that process data to reveal new insights, shaping how decisions are made at all levels. A 2011 report by McKinsey's research arm calls the explosion of data—and the analytical tools required to make these data useful—the "next frontier for innovation, competition, and productivity."

How it could affect smart growth

Data has always been used by smart-growth professionals and planners, notably via GIS (geographic information systems) tools capable of mapping thousands of indicators to inform planning decisions. In recent years, however, the volume and variety of data—as well as the accessibility and speed with which they are available—has created new opportunities for both public- and private-sector players. While virtually all of the developments discussed in this report benefit in some way from access to better data, two areas that deserve special attention are real estate and transportation.

[8] Since 2009, Philadelphia, Chicago, New York City and a number of other cities have also passed "open data" policies. Technically, private companies can also produce "open data" (data that are free to use and accessible to anyone), but the term is commonly used to refer to data collected and made accessible by government bodies.

Organization Profile: Walk Score

Founded in 2007, this Seattle-based company is working at the intersection of two key smart-growth fields affected by access to more data—transportation and real estate. Using mostly public data, Walk Score has developed an algorithm to produce a walkability score from 1 to 100 for any address in the United States. The company has also developed a Bike Score and Transit Score, and is working to incorporate several other categories of information, including crime data and social media information. According to Walk Score co-founder Matt Lerner, interviewed last year by *Slate*, the central question Walk Score seeks to answer is, "How do we make walkability and transit and commuting part of how people decide where to live?" While Walk Score provides information to individual users free of charge, it generates revenue by charging real estate companies (like Zillow and Trulia) a fee for using Walk Scores on listings. Walk Score also charges city planners and researchers for more in-depth data services, which inform a variety of planning decisions.

"Urban planners have been talking about walkability for a long time, but it's hard to get people to pay attention."

-Matt Lerner

Co-Founder, Walk Score

- *Walk Score capitalizes on increased demand for walkable, higher-density spaces and seeks to provide people with more objective information across a growing range of "livability" indicators.*

Photo: La Citta Vita, via Flickr

By creating a simple, user-friendly score, Walk Score appears to be strengthening the market for more walkable, transit-accessible, higher-density places. More than 10,000 real estate sites post Walk Scores for each listing, reaching 20 million users. A 2009 study of 15 metropolitan areas found that one additional Walk Score point was correlated with a $700 to $3,000 increase in property value.

Walk Score has been limited by the absence of some key types of data, such as databases of sidewalks and crosswalks,[9] but it is working to overcome these shortcomings by actively pursuing more nuanced strategies to capture all of the components of walkability.[10] Walk Score is also incorporating additional datasets related to neighborhood livability, including crime data and "social data" (searching social networking sites in a neighborhood for key words that reveal relevant neighborhood trends) to paint a broader picture of livability in a given neighborhood. As cities do a better job of collecting infrastructure data in a usable form, Walk Score will be able to incorporate these details into its scoring algorithm and aggregate this data in a way that is helpful to end users as well as city planners, developers, and researchers.

Other Key Players and Trends

Transportation "Big data" and "open data" are affecting transportation in a number of ways, making transit more accessible to users, helping planners recognize important trends, and paving the way for more customizable pricing options (discussed further in the infrastructure funding section). Mass transit was one of the first areas to benefit from the open data movement as private app developers in San Francisco, Seattle, and elsewhere took public data about buses and trains to help users track their real-time location. Now, data tools are being used for everything from measuring traffic congestion to tracking bike-share rentals and planning multi-modal trips.

Real Estate The real estate sector has already been shaped significantly by easier access to a wider range of data tools. With up-to-date information on everything from foreclosures to detailed household-level purchasing behaviors, savvy developers and investors are able to identify new opportunities more quickly and efficiently than ever. Residential real estate websites are also utilizing data in new ways, giving users access to more than just prices and square-footage information. In addition to providing Walk Score and Transit Score information, discussed above, sites like Trulia also

[9] The fact that pedestrian and bike information is not tracked the way vehicle information is (traffic counts and detailed information about roads and intersections) also makes it more difficult to justify infrastructure investments in these areas.

[10] A separate "Pedestrian Friendliness" measure developed by Walk Score incorporates detailed measures of connectivity and accessibility, such as average block length, link/node ratio, and intersection density.

provide quick access to neighborhood crime rates and school quality, two important factors in the residential real estate market.

Code for America Groups like OpenPlans, New Urban Mechanics (both mentioned in the "Citizen Engagement" section, above), and many others have benefited from a new program that places skilled computer programmers within city governments for a year to develop innovative data-based solutions to city problems. Code for America allows city governments to apply for these programmers' services (30 cities applied for 10 spots in 2013). So far, programmers have helped create a number of citizen engagement tools (including Textizen, mentioned above), and data-based tools like LocalData, which helps community organizers collect and organize neighborhood data. Code for America also works directly with civic start-ups, like MindMixer, to improve their business models and data capabilities.

Going Forward: Constraints and Next Steps

If it is true that "what gets measured gets managed," the availability of an ever-expanding set of smart growth-related data should be a net positive for the field of smart growth. Better data should, in theory, lead to better land-use decisions as researchers and policy-makers can better capture the real costs of sprawl and quantify the benefits of more livable, accessible cities. However, in order to be useful, data must be analyzed and presented to the right audience in a useful form. According to the McKinsey report cited above, the number of workers capable of performing this type of deep analysis with new, complex datasets is in short supply. As a result, it will be crucial for smart growth advocates to be at the front lines of the data revolution, ensuring that decision-makers and consumers have the relevant data in an accessible form.

7. Financing Tools for Infrastructure and Transit-Oriented Development

Infrastructure Financing and Transit-Oriented Development

Potential to Affect Smart-Growth Objectives:
Mixed-use, transportation, walkability, equity, adequate housing

Overview

One of the most critical problems state and local governments face is the deteriorating state of water, energy and transportation infrastructure. A stagnant economy and tight local, state, and federal budgets mean fewer funds are available for both repairs and new investments. In New Jersey, the American Society for Civil Engineers estimates that over $40 billion will be required over the next 20 years to maintain and upgrade drinking water and wastewater systems alone.

Infrastructure improvements are typically funded through some combination of debt financing (such as state or municipal bonds), user fees (tolls, water fees), state and federal grants, and general tax revenues. However, funding shortfalls in recent decades have caused states and municipalities to pursue innovative financing for infrastructure. Most of these strategies seek to generate new revenue through user fees or more sophisticated ways of capturing the increased property value often spurred by infrastructure investments. Many of these efforts involve public-private partnerships (PPPs).

Below is a brief overview of some of the current funding strategies used, along with a discussion of some of the innovative strategies that have emerged in recent decades. Due to the integral role that transit-oriented development (TOD) plays in many smart-growth strategies, special attention will be paid to infrastructure financing strategies that have been useful in TOD contexts. Many of the examples below are discussed in greater detail in two infrastructure-focused guides published in early 2013—the Environmental Protection Agency's *Infrastructure Financing Options for Transit-Oriented Development* and the New Jersey-focused report, *Facing Our Future*. While infrastructure financing is not as directly related to the world of social entrepreneurship as many of the efforts discussed earlier in the report, like those efforts, innovative infrastructure funding strategies have the potential to affect smart-growth outcomes and thus achieve a broader social impact.

User Fees

In theory, direct fees (or user fees) are one of the simplest methods for funding infrastructure. Unlike general revenue funds, user fees—such as water fees, tolls, and transit fares—are paid only by those who use the public resource, not the public at large. Ideally, user fees are high

enough to cover the annual operating cost of the infrastructure as well as the capital costs of building and maintaining it. While user fees can only generate revenue after the infrastructure improvement is completed, these future revenue streams can be used to provide construction capital through *revenue bonds* (discussed further under the *Debt* section).

User fees have several limitations, however:

- **Politics.** User fees are highly visible charges that are usually unpopular with constituents, causing many fees to remain artificially low for decades (or even decrease on an adjusted basis, as they fail to keep up with inflation), leaving infrastructure severely underfunded.
- **Non-excludable public goods.** User fees work well for public goods that are *excludable,* or easy to prevent "free-riders" from using (like trains, or water service). For more *non-excludable* public goods, such as public roads, user fees are much harder to implement.[11]
- **Equity impact.** User fees can be a more regressive way to fund infrastructure than a progressive income-tax structure. Since transportation, water, and energy are all necessities, under a user-fee-based system low-wage workers may end up paying a much larger portion of their income to cover those necessities. Governments can compensate for the equity impact of user fees through the tax code or direct subsidies, but this is often a politically contentious process.

Recent Developments in User Fees

Congestion pricing: First proposed by Nobel Prize-winning economist William Vickery in the late 1950s, congestion pricing is not a new idea. However, aggressive congestion pricing remains relatively rare in the United States. Under congestion pricing scenarios, tolls, parking fees, or transit fares increase during hours of peak demand, which 1) helps reduce congestion and 2) raises additional funds for transportation infrastructure and operations. Congestion pricing can be implemented on toll roads, parking meters/structures and public transit systems. In 2008, New York City had to abandon plans for a politically contentious congestion pricing plan that would have provided nearly $500 million a year in funding for mass-transit improvements.

Mileage-based user fees: While gasoline taxes act as a proxy for the amount that people drive, improved fuel efficiency decreases demand for gasoline,

[11] Toll roads and gas taxes are two attempts to capture revenue from road users, but both methods have limitations. Toll roads are costly to implement and gas tax revenues decline as fuel efficiency increases. Neither has been sufficient to fund the construction and maintenance costs of the U.S. road network.

providing fewer funds for transportation infrastructure.[12] Mileage-based user fees, or "vehicle miles traveled" (VMT) fees, essentially turn every road into a toll road by charging users by the mile. Location-based tracking technologies on cars could combine mileage-based fees with congestion pricing, which could reduce even further the demand for driving during peak hours. Several states, including Minnesota, have performed tests of mileage-based user fee systems, although privacy concerns could be a barrier to broader adoption.

Debt

The majority of infrastructure investments cannot be funded exclusively with grant funds or budget reserves. They are typically financed through one of three sources—private debt, public debt (bonds), or specially-created revolving loan funds.

Bonds are typically cheaper than private debt for cities, since tax breaks allow investors to earn returns comparable to other investment vehicles despite the lower rates for municipal bonds. *General obligation bonds* are issued for projects that do not generate revenue, such as schools and roads, while *revenue bonds* are paid back via revenue from the funded project and thus do not rely on general tax revenues. Other revenue-dependent bonds, such as *private activity bonds*, can also be issued when private partners are involved.

In addition to issuing bonds, cities or states can also look to state or federal governments for a variety of credit assistance tools or loans. The federal government can provide loan guarantees, bond insurance, or other assistance to help states and municipalities fund projects. For example, the Transportation Infrastructure Finance and Innovation Act (TIFIA) is a federal program that helps state and local governments finance larger projects, and advocates are pushing for a similar program for water infrastructure. *Infrastructure banks* are revolving loan funds set up at the state level that can be used to fund infrastructure projects (these are typically funded with public dollars, although privately-funded trusts are discussed below under *Equity and Public-Private Partnerships*). In early 2013, President Obama renewed calls for the creation of a national infrastructure bank.

Equity and Public-Private Partnerships

Private partners can also provide the capital to fund infrastructure in exchange for an ownership stake in the infrastructure development. This ownership stake is usually in the form of a long-term lease and is generally limited to infrastructure investments with a clear revenue stream (parking infrastructure, toll roads, etc.). The money paid by the private partner for the lease is used to offset the cost of construction. These *public-private partnerships* (PPPs) often involve private operation of the asset, so that the private party can

[12] Raising gasoline taxes to account for inflation and improved fuel efficiency would help but poses a political challenge in many cases.

control the user fees (often within agreed-upon limits) and ensure profitable operation of the infrastructure asset. *Infrastructure investment funds* allow multiple private partners to pool their resources to invest in public infrastructure assets.

Chicago Infrastructure Trust The City of Chicago faces an infrastructure funding shortfall that has become a familiar storyline throughout the country. While municipal bonds have been a favored strategy for cities to raise funds for infrastructure investments, Chicago's poor credit rating and unwillingness to raise user fees substantially leaves it with few options. The Infrastructure Trust is a non-profit agency that seeks to leverage private funds for infrastructure improvements. Mayor Rahm Emanuel reports that investors have made commitments of up to $1.7 billion so far. Projects will be approved by the trust's board on a case-by-case basis. The first project will be an energy-efficiency retrofit of public facilities, which will provide a return to investors through future energy cost savings.

Not all cities face Chicago's credit crisis, however. Boston, by comparison, will fund $1.8 billion of infrastructure improvements in the coming years largely through traditional bonds. (Boston also has a Moody's credit rating of Aaa for its general-obligation bonds, six categories higher than Chicago's A3 rating.) Nevertheless, other cities are watching Chicago's Infrastructure Trust closely to determine if these privately-funded trusts could fill the growing gap in public infrastructure funding.

Value Capture

Recognizing that infrastructure investments often increase the value of property in the affected area, *value capture* is the process of quantifying this increase in property value and using the additional future revenues generated by that projected increase to fund the infrastructure improvement. This strategy is often used in conjunction with TOD, since the addition of public-transit infrastructure to an area can lead to significant increases in its property values.

These strategies typically fall into one or more of the following four categories:

Improvement Districts Local Improvement Districts (LIDs) are set up to fund infrastructure improvements in a defined area via a voluntary additional property tax, which must be approved by a majority of property owners in the area. While regulations vary by state, LIDs typically have less authority than Business Improvement Districts (BIDs) in terms of operational control and what can be funded. **Example:** A LID was used to fund half of the $50 million capital costs of the South Lake Union Streetcar Project in Seattle.

Tax Increment Financing (TIF) Districts Made possible by legislation in 47 states, TIF districts are administered by local governments and divert increased property tax revenues into infrastructure improvements for the district. TIF can be used to fund bonds (in which the anticipated increase in property tax revenue over a

period of time funds the bond) or a more conservative "pay-as-you-go" approach, where the additional (over the baseline year) property taxes raised are diverted each year to pay for the infrastructure. TIF legislation has traditionally been limited to areas declared as "blighted" by the local municipality, but the "blight" requirements have grown looser—or non-existent—in some cases[13]. Like improvement districts, TIF districts are useful for markets only where there can be a reasonable expectation of increased property values (and thus, tax revenue) as a result of infrastructure investments.

Joint Development Used in TOD settings, joint-development agreements allow transit agencies to partner with developers to build mixed-use projects on land that is owned by the transit agency. This provides capital for investments in exchange for revenue-sharing agreements and allows the public transit agency to retain control of the site. **Example:** Washington Metropolitan Area Transit Authority has made heavy use of joint-development strategies, which prioritize TOD developments aligned with smart -growth principles. The strategy has been used in several other cities—including San Francisco, Philadelphia, and a recent effort by NJ Transit at the Morristown Transit Village—but many transit agencies are not accustomed to taking such a proactive role in TOD.

Other Innovative Models

Structured Funds These funds combine public, private, and philanthropic resources to create a large pool of funds to achieve a specific goal, such as acquiring property for affordable housing near transit stations. Often, the public-sector dollars receive the smallest return on investment and take on higher risk as an incentive to leverage private-sector dollars. Prominent examples of these sorts of funds include the New York City Acquisition Fund (which has leveraged $265 million for property acquisition), the Denver TOD Fund, and the Transit Oriented Affordable Housing Fund in the San Francisco Bay Area.

Smart Growth Investment Funds These real estate equity investment funds can be capitalized by any combination of private, foundation, or public dollars and seek to invest in priority smart-growth projects, such as mixed-use, infill, and TOD projects in targeted redevelopment areas.

- Bay Area Smart Growth Fund. The first Bay Area Smart Growth Fund is the earliest example of this type of fund, and is now in its second phase. Both funds were capitalized by more than $100 million of private equity and sponsored by the Bay Area Council, a business-supported advocacy group.

[13] In recent decades, a number of states (including Missouri, Alaska, Georgia, Virginia, and others) have loosened their blight designations or removed blight references entirely from TIF legislation, allowing municipalities to set up TIF districts in essentially any area whose property value might be increased in some way. Critics argue that this trend has resulted in less urban redevelopment and more subsidized sprawl in many states as a result of TIF.

- Rose Smart Growth Investment Fund. Attracting both social investors and traditional real estate investors, the fund was closed to new investors in 2009 after raising $50 million. Created by Jonathan Rose Companies, the fund seeks to fund green redevelopment projects and retrofits in urban centers like Harlem. The Rose Companies also set up an Affordable Housing Preservation Fund for New Jersey and made several acquisitions in Newark in recent years.
- Recent legislation in Maryland calls for the creation of a workgroup to investigate the potential for creating a Maryland Smart Growth Investment Fund,[14] which would use a mixture of public and private dollars to invest in smart-growth projects in transit-oriented developments and state-designated "sustainable communities." The fund would pursue a "triple bottom line" of profits as well as positive social and environmental outcomes.

OneBayArea Grant Program This innovative funding mechanism administered by California's Metropolitan Transportation Commission (MTC) consolidates $800 million of federal funds into a single program, rewarding communities for meeting regional housing needs and for investing in Priority Development Areas as defined by the region's sustainability plan. According to MTC's OneBayArea website, the program offers more flexibility for local agencies by consolidating funding across six different categories, including street preservation, bicycle and pedestrian improvements, transportation for "livable communities," Safe Routes to School funding, priority conservation areas, and congestion management planning.

Going Forward: Constraints and Next Steps

Critics of a growing private-sector role in infrastructure financing, operations, and TOD argue that savvy investors often end up reaping many of the benefits of public-private partnerships while the public sector takes on all of the risk. When public-private partnerships put operating control of public resources into private hands, private partners often compensate for revenue shortfalls by raising user fees (tolls, parking fees, etc.). Indeed, the political challenge of raising user fees is one of the primary reasons public bodies cede control of public resources to private companies. However, private deals can run the risk of offering little protection to citizens, particularly when equity is a concern or when the ramifications of a long-term agreement are difficult to predict.

When the SR-91 toll road in Orange County, California, was leased to a private company in 1995, the company received a non-compete clause in its 35-year lease, preventing any other transit improvements along the corridor that could undermine its profits. Eight years later, the

[14] Not to be confused with the Maryland Smart Growth Impact Fund, an existing grant program to spur strategic demolition and redevelopment.

Orange County Transit Authority needed to buy out the lease when it became apparent that the public good was not being served by the contract limitations. Similarly, just a few years after the City of Chicago entered into a 75-year lease agreement with private partners for operation of its parking meters, analysts found that they may have received less than half the actual value of the contract. With the rapid change of technology and infrastructure needs, recent history shows that public bodies have reason to be cautious about restrictive, long-term agreements with private partners that are not directly accountable to the public.

While creative financing solutions can bring new money to the table, they cannot change the basic calculus of infrastructure. Infrastructure construction costs and maintenance costs must be paid at some point, and there is a limit to the amount of debt cities and states can take on to fund those costs. These factors have led some advocates to call for wider use of full-cost pricing in areas like water infrastructure, a strategy that employs the (rather old-fashioned) concept of fully accounting for the costs of infrastructure improvements and maintenance when setting utility prices.

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