Neighborhood Health: A New Framework for Investing in Sustainable Communities

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The sustainability movement in the United States has increasingly embraced the environmental benefits of dense, mixed-use walkable communities. However, it has been slower to codify these benefits into formal project review and rating systems for investment. Sustainability advocates have historically focused on building-level performance, with a particular emphasis on energy, water, and waste management. This emphasis on the building as a stand-alone structure, separate from its neighborhood context, reflects both the challenges of neighborhood-scale data gathering and the fragmented nature of neighborhood development in the United States. As a result, individual projects may be high-performing in some respects without actually addressing the larger issues of site and neighborhood design that are so vital to sustainable communities. For example, one of the first Whole Foods stores to achieve Green Globe certification, located in Dedham, Massachusetts, is situated in a strip mall surrounded by parking and major roadways and is virtually unreachable on foot from nearby neighborhoods. Although projects like this certainly outperform their peers in terms of building energy performance and other important attributes, they fail to advance a larger vision for sustainable development that reduces auto dependency and fosters healthy, walkable, and connected communities.

Fortunately, public policymakers and private industry leaders have recently begun to develop a more robust set of tools for measuring sustainability at the neighborhood scale. In 2007, the U.S. Green Building Council launched the pilot version of LEED for Neighborhood Development (LEED-ND), and followed with an updated version in 2009. Created in collaboration with Congress for the New Urbanism and the Natural Resources Defense Council, LEED-ND integrates principles of smart growth, urbanism, and green building into the first national rating system for neighborhood design. The LEED-ND rating system captures a number of characteristics that contribute to sustainable communities at the neighborhood scale, including smart location, housing and jobs proximity, walkable streets, compact development, and transit facilities.

As the sustainability movement continues to evolve toward larger-scale interventions and measurement, it is vital to link sustainable development goals with research and best practices on the social determinants of health. Even modest changes to the built environment, which in turn shape behavior and social circumstance, can drive significant changes in health outcomes. A 2007 *New England Journal of Medicine* article identified behavior, environment and social circumstance as the largest determinants of premature death (together, these account for 60 percent of the effect). In contrast, genetics account for 30 percent, and health care only 10 percent.¹ These findings are particularly relevant to poor and workingclass Americans, who are far more likely to suffer from poor health and have significantly lower life expectancy.

A Framework for Healthy and Sustainable Development

Healthy development, like sustainable development, aims to address the very serious economic, environmental, and community consequences of what, where, and how we build. Record numbers of Americans are now suffering from chronic diseases such as diabetes and asthma that are strongly influenced by environmental conditions, while the cost of health care continues to grow. Between 1980 and 2004, health care costs grew faster than the economy as a whole. As a consequence, health spending now accounts for 16 percent of gross domestic product (GDP) compared with 9 percent in 1980. Direct health care costs for chronic disease, which account for 75 percent of health care spending,² are correlated to socio-economic factors, with diabetes and heart disease twice as prevalent among poor adults as among upper-middle-class Americans.³

The most significant driver of chronic disease in the United States is obesity. With more than one-third of its adult population obese, the United States faces an issue of epidemic proportions. Current health care costs associated with obesity are estimated at 21 percent of all medical spending in the United States, equivalent to \$190 billion in 2005.⁴ Researchers have estimated that if current trends continue, obesity-related medical costs could rise by \$48 to \$66 billion a year in the U.S. by 2030.⁵ At the individual level, obesity generates an additional \$1,152 in medical expenditures every year for an obese male and \$3,613 for an obese female in the United States. The annual cost to workplaces from lost productivity is \$3,792 for every obese male worker and \$3,037 for every obese female worker.⁶

Fortunately, there is a growing body of research that shows the economic, environmental, and community health benefits of walkable, transit-oriented neighborhoods are closely linked. An April 2013 study in the *American Journal of Public Health* found that increasing median daily walking and bicycling from 4 to 22 minutes reduced the burden of cardiovascular disease and diabetes by 14 percent while also decreasing greenhouse gas emissions by 14 percent. The study further concluded that the increased physical activity associated with active transport could generate a large net improvement in population health.⁷ Similarly, a

¹ S. Schroeder. "We Can Do Better: Improving the Health of the American People," New England Journal of Medicine, 357 (2007):1221-28.

² G. Anderson, "Chronic Conditions: Making the Case for Ongoing Care" (Baltimore: Johns Hopkins University, 2004).

³ L. Berkman and I. Kawachi, eds., Social Epidemiology, first ed. (New York: Oxford University Press; 2000).

⁴ J. Cawley and C. Meyerhoefer, "The Medical Care Costs of Obesity: An Instrumental Variables Approach," Journal of Health Economics. 2012; 31:219-30.

⁵ Wang CY, McPherson K, Marsh T, Gortmaker S, Brown M, "Health and Economic Burden of the Projected Obesity Trends in the USA and the UK," Lancet. 2011; 378:815-25.

^{6 &}quot;The Heavy Price of Obesity in America: By the Numbers," The Week, May 2, 2012.

⁷ N. Maizlish et al., American Journal of Public Health, 103 (2013):703-9. doi:10.2105/AJPH.2012.300939

2012 study in the *American Journal of Preventive Medicine* found that the odds of hypertension were 24 percent lower and 31 percent lower among individuals with low and high levels, respectively, of active transportation, compared with no active transportation, and high active transportation was associated with 31 percent lower odds of diabetes. The article concluded that, "active transportation was associated with more-favorable cardiovascular risk factor profiles, providing additional justification for infrastructure and policies that permit and encourage active transportation."⁸ Increased daily walking and decreased daily driving can also produce a number of ancillary benefits, including reduced stress, greater neighborhood sociability and improved public safety. Research has demonstrated that transit-oriented neighborhoods have a significantly lower rate of traffic fatalities, and often have lower rates of violent crime because of the greater presence of pedestrians and cyclists whose "eyes on the street" increase overall security.⁹

Recognizing these important connections, the Centers for Disease Control (CDC) published a notice in the April 2013 Federal Register seeking public comment on a "Call to Action on Walking," noting that "Many factors can contribute to low levels of walking and physical inactivity, including lack of access to safe and convenient places to walk, lack of signage and directional information, long distances to destinations, lack of public transportation, and lack of the inclusion of persons with mobility limitations in walking campaigns and programs."¹⁰

Access to fresh food is another important dimension of healthy and sustainable development. Projects that create new outlets for production, processing, distribution, and sale of healthy food can help to reduce shipping and transport distances, place healthy food options closer to where people live and work, and create local jobs. This is particularly important in lower-income neighborhoods that often lack access to fresh food. A recent nationwide study of over 28,000 ZIP codes found that low-income ZIP codes have 25 percent fewer per capita supermarkets than middle-income ZIP codes.¹¹ Although there is still more work to be done in understanding the complex relationships between income, obesity, and food access, improved access to healthy food is an important part of addressing health disparities in poor neighborhoods.

Finally, healthy neighborhood development projects located near transit can bring substantial benefits to low- and moderate-income households most sensitive to the combined costs of housing and transportation. The Brookings Institution, for example, notes that, "The combined costs of commuting and housing make up a larger portion of the household

⁸ G. Furie and M. Desai, "Active Transportation and Cardiovascular Disease Risk Factors in U.S. Adults," American Journal of Preventive Medicine, 43 (2012): 621–28.

⁹ T. Litman, "Evaluating Public Health Transportation Benefits" (Victoria, BC: Victoria Transport Policy Institute, June 2010), 8-9.

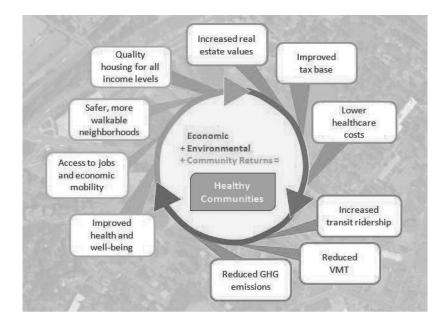
^{10 &}quot;Walking as a Way for Americans to Get the Recommended Amount of Physical Activity for Health," Federal Register, 78 (62) (April 1, 2013), 19491.

¹¹ M. Manon and C. Harries, "Food for Every Child: The Need for more Supermarkets in Massachusetts" (Philadelphia: The Food Trust; December 2010), 3.

budgets of the working poor than other households.... For households in the lowest one-fifth of the income distribution, spending on housing, transportation, and food jumps to 71 cents of every dollar.^{*12} By locating more affordable housing in job centers and by improving access to transit and healthy food, healthy neighborhood development can be an effective strategy for fighting poverty and supporting economic mobility among low- and moderate-income households.

Financial Challenges and Opportunities for Healthy Neighborhood Development

Despite mounting evidence for the critical role that neighborhood conditions play in determining health outcomes, the resources needed to finance healthy and sustainable neighborhoods (including infrastructure, transportation, affordable housing, commercial and retail space, and community facilities) are becoming increasingly scarce. In fiscal year (FY) 2011 and FY 2012, the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program, one of the primary sources of funding for community capital improvement projects, was cut by 32 percent, and in FY12, HUD's HOME Investment Partnership budget was slashed by 38 percent.¹³ This loss of long-standing public funding, alongside a surge in vacant and abandoned properties owing to foreclosure, has had a disproportionate impact on low- and moderate-income neighborhoods across the country. Existing systems and policies are not fully capable of addressing the current crisis.



¹² A. Berube , E. Kneebone, R. Puentes, and A. Tomer, "Missed Opportunity: Transit and Jobs in Metropolitan America." (Washington, DC: Brookings Institution, May 2011), 3.

^{13 &}quot;CPD Appropriations Budget," U.S. Department of Housing and Urban Development, accessed February 25, 2014, http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/budget.

Fortunately, the scale and severity of the challenge is generating new interest in innovative, cross-platform solutions that harness the strengths of the health and community development fields to create meaningful, cost-effective, and sustainable change. Linking investments in community development with investments in health has the potential to improve lives while creating new opportunities for socially responsible "triple bottom line" investments that generate financial, social, and environmental returns. For example, the growing interest in social impact bonds (SIBs), in which private entities contract with government agencies to deliver targeted social outcomes (such as a reduction in recidivism) that reduce public expenditures, demonstrates that the public sector is willing to engage the private and nonprofit sectors more deeply in solving complex social problems. In contrast to the health care system's traditional focus on clinical treatment of illness, the Centers for Disease Control and Prevention's Community Transformation Grants Program, authorized under the Affordable Care Act, is designed to prevent death and disability through policy, environmental, programmatic, and infrastructure changes. In the context of this rapidly evolving landscape, there is a tremendous opportunity to pioneer new approaches that create measurable improvements in public health and generate attractive returns for investors. Linking investments in community development with investments in health, especially in low- and moderate-income neighborhoods, has the potential to improve lives, reduce health care expenditures, and build sustainable communities while creating new opportunities for socially responsible investment.

Furthermore, the environmental, community, and health benefits generated by investments in transit-oriented development need not come at the expense of financial returns. In fact, just the opposite is true. A recent study by Chris Leinberger and Mariela Alfonso sponsored by the Brookings Institution found that more walkable neighborhoods, including those that are close to transit, have higher commercial and residential rents, retail revenues, and for-sale housing values than less walkable places.¹⁴ Based on five levels of walkability, ranging from poor to very good, a one-level increase in walkability translates, on average, to 18.5 percent higher residential rents, 21 percent higher retail rents, 27 percent higher office rents, 28 percent higher for-sale home values per square foot, and 80 percent higher retail revenues. Between 2000 and 2007 (pre-recession), places with very good to good walkability had a 23 percent premium per square foot valuation on average. During the recession (2008-2010), that premium nearly doubled to 44.3 percent. The researchers found a consistent relationship between walkability and economic value regardless of median income in the neighborhood.

In addition, the current gap between supply and demand for walkable neighborhoods creates an attractive opportunity for investors to lock in the value of long-term price appreciation in these areas. Acknowledging this opportunity, real estate advisory firms are encouraging their clients to invest in transit-rich locations. For example, the Urban Land Institute's

¹⁴ C. Leinberger and M. Alfonso, "Walk This Way: The Economic Promise of Walkable Neighborhoods in Metropolitan Washington, D.C." (Washington, DC: Brookings Institution, Metropolitan Policy Program May 2012), 9-12.

2011 "Best Bets" recommends that investors "favor infill over fringe" and consider buying land, which "will not get any cheaper than it is now."¹⁵ In a May 2012 study, the U.S. Conference Board notes that walkable neighborhoods will lead the recovery of the housing market. According to the study, "house prices in these locations fell by less than the national average between 2006 and 2011, in some cases by much less. The same is true of local employment.... These localities will be the first to recover. We expect house prices here to rise...by up to 5 percent a year between 2014 and 2017."¹⁶

Alongside increased real estate values, the financial benefits associated with even incremental improvements in public health are substantial. According to an analysis in the *American Journal of Public Health*, as little as a 5 percent reduction in the prevalence of diabetes and hypertension (conditions that are measurably improved by increased exercise and weight) would save almost \$25 billion annually in medium-term health care costs.¹⁷ In sum, transitoriented development projects that create healthy and walkable neighborhoods hold great promise for delivering multiple benefits to investors and the community.

The Role of Private Equity in Building Healthy Communities

New financing tools are urgently required to support the development of transformative mixed-income, mixed-use development on existing sites close to transit, particularly in low and moderate income neighborhoods. In most of these locations, the financing gaps for moderate-income and market-rate housing as well as retail/commercial and industrial space have made these types of projects quite challenging. The markets are not strong enough (or have not yet proved themselves strong enough) to support these uses at scale without some combination of deep subsidies and long-term equity investments. The available subsidies are very limited and highly competitive, and most developers do not have sufficient equity to self-fund projects of this scale. Further compounding this issue, project underwriters have generally been unwilling to finance future unproven value. For example, in larger-scale housing projects, the market rate component of those projects in low- and moderate-income (LMI) neighborhoods is a financial drain on the pro-forma. This is because project costs are relatively high (comparable to any other dense residential project), but the rents that can be underwritten are limited by the rents in the surrounding neighborhood, and typically lenders have believed that equity should bear the risk of achieving rents or sales prices greater than current market. This is a particular challenge for commercial projects, where debt levels are based on the strength of pre-leasing. Over time, real estate values in the neighborhood will grow, but the developer has no way to monetize this long-term growth potential.

Therefore, triple bottom line private equity funds, which provide patient capital from philanthropic and high net worth impact investors, can enable larger-scale projects to move forward that would not otherwise be feasible in a transitional real estate market. These equity funds also leverage as much as 4:1 other sources of public and private financing, including

¹⁵ Urban Land Institute, "Emerging Trends in Real Estate" (Washington, DC: Urban Land Institute, 2011), 12.

¹⁶ Louise Keely et al., "The Shifting Nature of U.S. Housing Demand" (New York: U.S. Conference Board Demand Institute, May 2012).

¹⁷ R. A. Hammond, "Obesity, Prevention, and Health Care Costs." (Washington, DC: Brookings Institution, 2012).

both conventional debt and tax credit equity, and provide greater assurance to other private lenders and public agencies that the projects are worthy of investment.

Healthy Neighborhoods Equity Fund: A New Tool for Healthy Development

Recognizing the complex and interwoven challenges of building healthy, equitable, and sustainable communities, the Conservation Law Foundation and the Massachusetts Housing Investment Corporation have partnered to create an innovative new private equity fund designed to bring new sources of capital to promising transit-oriented development projects that have the potential to drive neighborhood transformation. The Healthy Neighborhoods Fund (HNEF) will invest in high-impact real estate projects in Massachusetts that strengthen community and environmental health, promote regional equity, and provide attractive risk-adjusted returns for investors. The Fund will provide patient capital for catalytic residential, commercial, and mixed-use projects and help leverage other sources of private and public financing. As part of the investment screening process, HNEF will prioritize projects that bring lasting benefits for local residents and help advance a community vision for the future. Recognizing that each community is unique, the Fund will offer unmatched flexibility to support a wide range of project types and uses that support healthy neighborhoods.

HNEF is designed to help address a myriad of health and environmental issues facing the Commonwealth of Massachusetts. Despite Greater Boston's status as a world leader in health services and research, the state has seen an alarming rise in obesity and chronic disease during the past decade. The Massachusetts Department of Public Health attributes an estimated \$1.82 billion per year of medical expenses in the Bay State to adult obesity and its correlates. These costs are especially acute in low-income neighborhoods and communities of color. In addition, residents of lower-income neighborhoods often face greater challenges with respect to public safety, which can contribute to elevated stress and depression.

Massachusetts is also facing significant environmental challenges related to greenhouse gas emissions (GHGs). The transportation sector, as the largest single contributor to GHG emissions, represented 38 percent of total emissions in 2009. Of particular concern is the rapid growth in transportation-related emissions in Massachusetts over the past two decades; from 1990 to 2000, these emissions rose by 11 percent, and from 2000 to 2005 they rose an additional 6 percent. Although the growth rate has fallen slightly since 2008, transportation is still the biggest GHG culprit. For these reasons, the future environmental health of the region will be determined in part by the extent to which new development occurs in neighborhoods with access to transit and services that produce fewer vehicle miles traveled.

All of these trends point to the growing importance of walkable, mixed-use, transitoriented neighborhoods as a centerpiece of any future growth strategy for the state. Fortunately, Massachusetts has a strong network of Community Development Corporations, forprofit developers, a progressive state government, and a well-used transit system that are part of the solution. A consensus is also emerging at the state level regarding the importance of transit-oriented development, as evidenced by significant public investments through MassWorks and other financing programs. New private-sector financing tools, alongside public policy and regulatory action, will be necessary to accelerate the development of healthy, walkable communities across the state.

HNEF Goals and Objectives

The Conservation Law Foundation and the Massachusetts Housing Investment Corporation are currently working in collaboration with a mix of public, private and philanthropic partners to accomplish the following goals through the HNEF:

Attract *new sources of private equity* (including program-related investments) to support moderately priced and market-rate housing, local job creation, commercial development, and healthy, walkable, mixed-use neighborhoods in a variety of transit-oriented development settings.

Align *equity investments* with other sources of funds, including state housing, economic development, and infrastructure dollars, to spur and accelerate the development of high-impact transit-oriented development projects along key transportation corridors.

HNEF will use a quadruple bottom line approach to evaluating projects. The approach includes a consideration of community, environmental, and health impacts in addition to financial returns. In that context, HNEF will seek to invest in neighborhoods that are in the early to mid-stages of transformational change, and where an investment from the HNEF can help spur and accelerate that change. HNEF will prioritize projects that create measurable benefits for residents and employees, the neighborhood, and the region. The fund sponsors will seek to partner with projects that implement a community vision, capitalize on the investments already made by other sources, and demonstrate clear potential to advanced regional equity and reduce health disparities.

Evaluating Impact

The Fund's approach to measuring HNEF's impacts has been shaped in part by our work with the Massachusetts Department of Public Health and the Metropolitan Area Planning Council, with whom we have jointly undertaken a Health Impact Assessment for three sample projects in Roxbury, Massachusetts. As part of the Health Impact Assessment, the Department of Public Health and the Planning Council identified 12 health determinants associated with transit-oriented development as well as health outcomes associated with each of these determinants. These determinants were ranked according to their breadth of impact, as shown in the chart on next page.

Breadth of Impact	Health Determinant	Health Outcomes
	Walkability/Active Transport	Physical activity, mental health, chronic disease
	Safety from Crime	Injury, physical activity, mental health, real and perceived safety
	Economic Opportunity	Economic stability
	Food Access	Nutrition, chronic disease
	Safety from Traffic	Injury, air quality, real and perceived safety
	Affordable Housing	Economic stability
	Green Housing	Exposure to environmental contaminants, chronic disease
	Green Space	Physical activity, mental health, air quality
	Social Cohesion	Mental health
	Displacement/Gentrification	Mental health, economic stability
	Air Quality	Air quality
	Environmental Contamination	Exposure to environmental contaminants

Using the Health Impact Assessment as a foundation, HNEF will use a standardized screening process for investment that focuses on key characteristics of the neighborhood and the proposed project. The initial screening will focus on the neighborhood in which the project is located to determine whether it meets the baseline criteria for investment. This process may be streamlined over time if multiple projects are located in the same neighborhood. Broadly speaking, HNEF is seeking to invest in neighborhoods that are in the early to middle stages of transformational change, and where an investment from the HNEF can help spark and accelerate that change. The neighborhood screening criteria will include the following:

- Community Support and Growth Potential: The Fund will invest in neighborhoods that are well-positioned for substantial long-term growth. To evaluate this, we will consider the level of community support for new development; the physical form of the existing neighborhood, including density, land use, transportation networks, and connections to adjacent residential and commercial areas; current zoning and permitting requirements; and other existing and planned investments nearby.
- Access to Multi-Modal Transportation: The Fund will make investments in transitaccessible neighborhoods that have the potential to become more walkable and less auto-dependent. In general, the Fund will prioritize projects that are located within a quarter-mile to a half-mile walk of an existing or planned transit station (including subway, commuter rail, and/or high-speed bus service). The Fund will also consider investing in projects outside existing transit corridors that offer substantial opportunities for improved walkability and health.
- Opportunity to Advance Regional Equity: The Fund will make investments in economically disadvantaged neighborhoods, as measured by household income, poverty and unemployment rates, educational attainment, and environmental justice

status. In addition, the Fund will consider investments in more prosperous neighborhoods if the proposed project will strengthen the supply of affordable and/or workforce housing and provide new access to jobs and services for disadvantaged populations.

• Opportunity to Reduce Health Disparities: The Fund will prioritize investments in neighborhoods with significant health disparities that are influenced by the built environment, including obesity, chronic disease, stress and depression. This evaluation will include Behavioral Risk Factor Surveillance Study (BRFSS) data generated by the Mass. Department of Public Health as well as the Boston Public Health Commission (for projects located in the City of Boston).

The project screening criteria reflect our interest in supporting transformative projects that will: i) create dense, mixed-use, walkable neighborhoods that promote active living, increase transit use, and reduce Vehicle Miles Traveled (VMTs); ii) provide new economic opportunities, especially for low and moderate-income residents; iii) contribute to quality housing for all income levels; iv) increase access to fresh and healthy food; v) create a healthy and safe environment. Based on these considerations, we have identified the following factors that will be considered as part of the project review and rating process:

- 1. Increase in overall walkability for the site and surrounding neighborhood;
- 2. Increase in the number of new people living and/or working within ½ mile of transit;
- 3. Increase in economic opportunity through new job creation and access to regional job centers;
- 4. Increase in the quality and diversity of the housing stock;
- 5. Increase in access to fresh and healthy food;
- 6. Increase in access to green space and recreational facilities;
- 7. Use of Crime Prevention Through Environmental Design (CPTED) strategies;
- 8. Use of design and construction techniques that promote indoor air quality;
- 9. Use of design and construction techniques that promote energy efficiency, minimize waste, and contribute to cleaner air, land and water;
- 10. Potential to catalyze additional private and public investment.

In addition to measuring the impact of specific projects, a long-term goal is to expand our understanding of the relationship between health and the built environment. Toward this end, we hope that knowledge and insights gained through Fund activities will have a broader influence on health and community development investment decisions. At the same time, we recognize that Fund sponsors alone cannot sustain the level of research and documentation needed to yield significant new findings. We are therefore exploring the opportunity to develop a longitudinal research program that will operate alongside the Fund. Although there is more work to be done in developing the research proposal, we anticipate that the research effort will track neighborhood changes across multiple domains over 8–12 years, consistent with the timeframe for equity returns to investors in the Fund. These domains include economic, social and behavioral, environmental, and health outcome indicators. Taken together, these indicators can help to predict and track neighborhood change over time and may provide important new insights about the connections between the built environment and health.

HNEF Pipeline and Impact

HNEF is currently building a pipeline of potential projects for investment that will build on plans for expanded transit access in greater Boston during the next decade, including the Fairmount Line, Orange Line, and Green Line. The Fund will also invest in Gateway cities and suburban centers outside of Boston that are supported by regional commuter rail and bus service. In all of these locations, multiple sites are awaiting construction or renovation for a mix of uses that will provide new opportunities for healthy and sustainable development. A recent analysis by the Metropolitan Area Planning Council found that transitoriented neighborhoods in greater Boston have the potential to accommodate 76,000 new housing units and 133,000 new jobs during the next 25 years.¹⁸ Targeted investment in these locations can help to unlock the social and economic potential of these communities while improving health outcomes for thousands of people who live and work in Massachusetts. This leading-edge approach may also generate downstream benefits for similar projects and funds across the country.

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¹⁸ T. Reardon and M. A. Dutta, "Context-Based Station Area Typology and Transit Oriented Development Goals for Metro Boston" (Boston: Metropolitan Area Planning Council, March 2012).