

HELPING COMMUNITIES CREATE
VIBRANT, HEALTHY AND
ECONOMICALLY PROSPEROUS
NEIGHBORHOODS

building capacity



Acknowledgements

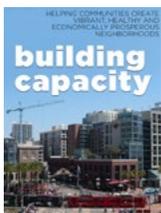
The work that provided the basis for this publication was supported by funding under an award with the U.S. Department of Housing and Urban Development and the U.S. Environmental Protection Agency . The substance and findings of the work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the federal Government.

Team Implementation

Reconnecting America, Strategic Economics, Center for Neighborhood Technology, Enterprise Community Partners, Center for Creative Land Recycling, and Kim Burnett Consulting.

Special thank you to Mariia Zimmerman from MZ Strategies, LLC, for her contribution to the *Unlocking MPO Funding to Support Sustainability* issue brief.

Compiled by Reconnecting America, December 2, 2013



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Introduction

Since 2010, 143 communities have received funding to support the creation of sustainable communities through the Sustainable Communities Initiative (SCI) grants provided by the U.S. Department of Housing and Urban Development. Additionally, through the collective interagency efforts of HUD, the U.S.



Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA), an additional number of communities received funds through programs such as TIGER

(DOT) and EPA Sustainable Community Technical Assistance and Brownfield Area Wide Planning grants (EPA). The grants provided opportunities for cities and regions of various sizes to coordinate long range comprehensive plans, support transit-oriented development, create revitalized main streets, foster economic growth, create and preserve affordable housing, improve health and well-being, increase access to fresh foods, and create quality jobs and educational opportunities.

Through the joint funding efforts of HUD and EPA, grantees were eligible to receive capacity building services, which provided access to technical experts and resources to support successful implementation of the grants. SCI grantees had access to 33 organizations delivering capacity building in topics such as implementation, water infrastructure, scenario planning, social equity, rural places, small towns and tribes and a learning network to facilitate best practices. Team Implementation, led by **Reconnecting America**, provided a range of targeted, collective and one-on-one activities, best

practices, case studies and resources to support all SCI grantees with implementation efforts. Other team members are **Strategic Economics**, the **Center for Neighborhood Technology**, **Enterprise Community Partners**, the **Center for Creative Land Recycling** and **Kim Burnett Consulting**.

The information in this document represents a compilation of specific issue area briefs provided by Team Implementation. Each issue brief accompanied a webinar and allowed grantees to gain additional resources on topics such as creating regional TOD plans and strategies, infill infrastructure financing, advancing sustainability in a slow economy, and redeveloping brownfield properties. This document was created for the purpose of providing grantees with a one-stop resource for all issue briefs from Phase I Capacity Building work of Team Implementation.



Creating Regional TOD Plans & Strategies

Introduction

TOD is increasingly viewed by regions of all sizes as a fundamental strategy for addressing regional issues, including: reducing vehicle miles traveled and regional congestion, enhancing access to jobs, increasing transit ridership and building strong, healthy communities for people of all incomes. In turn, regional stakeholders including Metropolitan Planning Organizations (MPOs), transit agencies, and regional equity collaboratives are increasingly playing a role in supporting transit-oriented development. Regions of different scales and contexts can benefit from taking a coordinated approach to TOD and transit planning in places with extensive, emerging, or even planned transit networks.

The Basics: What is TOD and What Role Does Transit Play?

Transit-oriented development (TOD) is typically understood to be a mix of housing, retail and/or commercial development and amenities in a walkable neighborhood with high-quality public transportation. At the core of transit-oriented development is the idea that people with a wide range of incomes can live and work in places with a variety of transportation options and amenities, allowing them to take care of most of their daily trips and access basic needs by using transit, walking and biking. TOD can be a single development project, but can also more comprehensively describe the components of a neighborhood or district that are well-connected to the region's transit network.

Service vs Technology: Transit networks may be composed of many different transit technologies, including subway, light rail, streetcar, bus and bus rapid transit (BRT). Because TOD depends more on high-quality service than it does on the transit

technology, any of these may support TOD. High-quality service means convenient and frequent service so riders don't have to wait a long time for the next bus or train. Dedicated lanes or rights of way are also important components of high-quality service, and serve to "fix" the transit line and provide certainty for developers, residents, and other stakeholders that the transit line, stop, or station will not be moved.

The Transit Network: The size of the transit network also plays a role in defining TOD. A transit network is made up of many kinds of public transit, and encompasses the bus and rail lines and their respective stops and stations. The more extensive the network, the more origins and destinations are accessible by transit, which makes transit a more viable alternative to driving and relieves burdensome commutes for those without vehicles. And while it is obvious that larger transit networks, with more stops and stations, can ensure that more people live and work near transit, regions with larger transit networks tend to attract more residents and jobs on average per station than regions with smaller networks.

Destinations Matter: While the transit network is important, regions with smaller transit networks or those beginning to think about building a small network can also leverage their transit to create successful TOD. Linking transit to regionally important destinations (downtown central business districts, major medical and educational centers, entertainment and recreational centers) as well as "origins" (residential neighborhoods) will help create a successful transit network which can be expanded in the future and will support TOD. In regions of all sizes, new transit investment should be aligned to support successful TOD.

Benefits of TOD: Regions of all sizes have identified TOD as one key component in addressing a variety



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of complex regional issues. Because successful TOD offers residents and workers transportation choices, it can help **reduce vehicle miles traveled** and regional congestion while lowering the combined costs of housing and transportation. By linking neighborhoods to transit, TOD can **enhance access to jobs** and other opportunities and services, including education and workforce training. These connections are particularly important for lower income households, who are more likely to rely on transit to access opportunities and who can also appreciate the **lowered transportation costs** associated with living in TOD. When TOD incorporates affordable housing as a key component, it can also **support regional affordable housing needs**, increasing the housing choices for people of all incomes. In successful TOD, more people are likely to take transit to some of their destinations, **increasing transit ridership** within the regional transit network. Perhaps most significantly to regional planning, these benefits accrue not only to the urban centers in a region, but **benefit all residents, including those in more suburban places**. Transit that connects to suburban places can offer residents all of the benefits above, as well as **reducing congestion** for those who continued to access the freeway network. Strong transit networks can also help **support the regional economy**—ensuring that employers can locate in places where they can access employees with a variety of skills and that low-income workers can access living wage jobs.

Making It Regional: Regional TOD Plans and Strategies

TOD at the individual neighborhood scale is more successful if both public and private investments are planned as part of a regional transit or TOD strategy. This improves the efficiency and the cost-effectiveness of transportation investments and yields more value to more people. And because so many of the benefits

of TOD are regional in nature, many regional actors have begun to take on a role in supporting TOD. However, regional agencies, partnerships and collaboratives are often beholden to a broad range of communities, including some that aren't ready for or supportive of substantial investment in livability infrastructure or intensive development. How can regional groups simultaneously focus resources in the right places, while remaining accountable to all constituents?

One emerging tool is regional TOD planning and TOD typologies. These plans and strategies will differ according to local need, and the case studies demonstrate a few specific examples of how regional TOD planning and implementation can work. But the benefits for TOD at a regional scale can be accessed by all regions, whether they have an extensive or emerging transit network.

Benefits of Regional TOD Plans

A regional TOD plan or strategy can help make TOD more successful in several ways.

- **Focus resources and coordinate diverse interests:** One of the most significant benefits to regional TOD planning is how this tool can focus and prioritize resources, directing funding, staff time, etc. and make the most of public investments. Not every station area or node in a region will be ready for the same type of investment at the same time, and a regional TOD strategy can help not only identify what kinds of investments are right for different places but can also act as an educational tool to show where individual places lie on the spectrum of TOD-readiness. This coordination between diverse interests and needs is another way that regional TOD planning can benefit all parties involved. TOD typologies in particular can help this process by providing a data-driven approach, giving agencies and non-profit organizations a defensible model for focusing



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investment in only a few places.

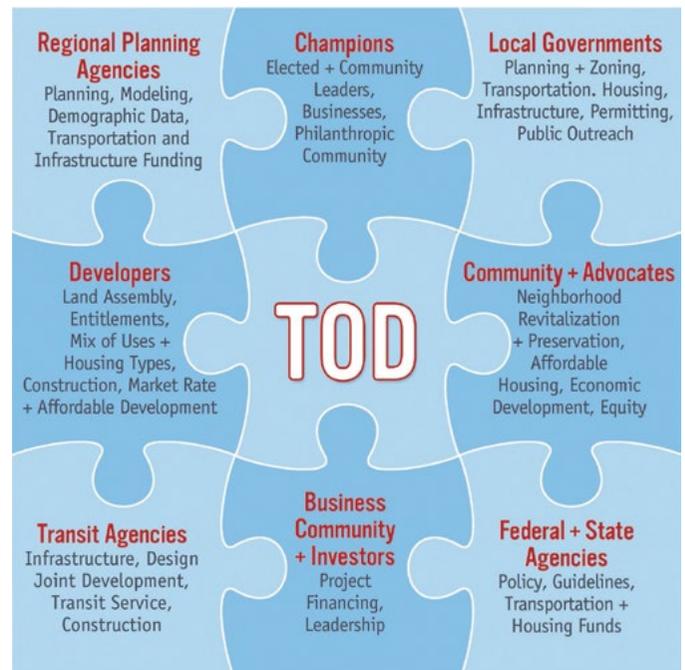
- **Create a set of goals and actions for implementation:** Identifying the key players who must be responsible for different aspects of implementing a regional TOD plan clarifies roles and responsibilities and can give advocates a tool for focusing their activities. Goal setting also helps link TOD planning to other regional initiatives, especially transit planning initiatives that seek to build new transit or make improvements or changes to existing service. Equity goals that prioritize the right kind of investments in low-income communities and communities of color should be included.
- **Ensure equitable outcomes:** Affordable housing and equitable access to opportunities are major regional concerns and should be tied into regional TOD plans to ensure that people of all incomes, race and abilities benefit from investments in transit and TOD. Regional TOD strategies can be linked to regional objectives on the provision of affordable housing, ensure transit or other investment supports low income access to jobs and educational opportunities, or include equity metrics such as lowered commute times or the availability of basic services at the neighborhood level. The [Mixed-Income TOD Action Guide](#) a tool that can help local jurisdictions and advocates walk through the questions and issues in looking at the preservation and development of affordable housing near transit and the prevention of resident displacement due to rising real estate values. The guide helps practitioners identify the most appropriate and effective planning tools for supporting affordable housing and mixed-income neighborhoods near transit.

5 Approaches to Creating Regional TOD Plans and Strategies:

While the specific process and form of regional TOD planning will differ from region to region, below are

five potential approaches that regions may take to accomplish TOD planning. They may be combined, depending on the stakeholders involved in the planning process and what outcomes they desire.

Stakeholder Collaboration: For all five approaches, stakeholder collaboration is a critical component. Successful regional planning for TOD should include players at all levels — the state, region, counties, cities and neighborhoods. These stakeholders may have different goals and objectives, but a regional TOD planning effort can create common ground and help ensure that responsibilities and rewards are shared. The graphic below shows the stakeholders who should be involved during the planning process.



Key players in all of the approaches below include the MPO (Metropolitan Planning Organization), regional and local advocates, local jurisdictions, and transit agencies. Planning processes and resources should be structured to ensure long-term participation of low income communities, who are less likely to be supported by their jobs or positions to participate.

Finding Data: The approaches below include suggestions for different kinds of analysis to provide



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a frame on which a regional TOD plan can be built. Data can be found both in national and local sources.

Locally, your **MPO** is the best source for regional transportation data like vehicle miles traveled and regional travel patterns. The **MPO/COG** will also maintain consolidated land use plans, and in some cases has information on green infrastructure. The local **transit agency** will have information on the location of existing and proposed transit lines, routes, stops and stations and most will have ridership information. They will also have information on transit-held land for joint development opportunities. **Local jurisdictions**, cities and counties, will have information on the existing supply and shortage of affordable housing and will be the source for market studies. They will also have information on recent and proposed development, including building permit data. **County Assessor's** offices maintain parcel data that has information on parcel sizes, vacant land, and property and land values.

Nationally, **American Factfinder** has consolidated much of the national data the US Census Bureau collects, especially on local and regional demographics of residents including the 2010 Census and the annually updated American Community Survey. **OntheMap** is an online tool that maps employment data (using the Longitudinal Employer-Households Dynamics) and shows where people work and where workers live on maps with companion reports on their age, earnings, and industry distributions. HUD is a rich source for data, including geographical information on federally subsidized affordable housing (Low Income Housing Tax Credit units and Section 8 and 202 project-based units.) The **National Transit Database** has information reported from transit agencies on ridership, operating and maintenance costs and more. Finally, the **TOD Database** has information taken from some of these national data sources for every existing and many proposed fixed-

guideway transit stations in the US.

1. Identify and understand existing conditions in station areas

Why: Analyzing existing conditions can illuminate barriers and opportunities to TOD, identify which characteristics the region as a whole shares, and how particular corridors or station areas face specific challenges or have specific opportunities to support TOD. Basic demographics (housing tenure and median income) can identify neighborhoods that may be more vulnerable to displacement or where persistent patterns of racial segregation and poverty may need to be addressed. An analysis of existing conditions may also identify successful nodes or TOD areas that can be a model for the rest of the region.

This approach gives regional players the opportunity to convene TOD stakeholders around multiple TOD goals. Barriers to TOD success may include access and infrastructure challenges, environmental concerns, and equity considerations, in addition to the market for new development. These are all areas in which residents and subregional groups may be able to come together to advocate or support a suite of TOD goals that incorporate many viewpoints and objectives.

How: The TOD Database (toddata.cnt.org) is a first stop for quantitative data available for all existing and many planned station areas in metro regions across the country. It is also important to incorporate the more qualitative experience of planners, community based organizations, residents and other actors.

2. Work with stakeholders to create a vision for future land uses in station areas

Why: This approach requires that regional planners come together with local stakeholders to determine the most desired and the most realistic vision for all station areas within the region. That



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collaborative work can help create a group of people and organizations who will implement the vision in the future. This approach can also be cost effective, creating a big picture vision of communities around transit or major activity nodes before doing any station area or district planning, which tends to be more expensive. Understanding community priorities for station areas in terms of density, land uses, economic and housing opportunities, and infrastructure improvements can also help prioritize stations for investment. Nodes or centers that agree to take on a greater share of regional housing or other regional priorities may be prioritized for funding down the line.

How: Identifying existing conditions is an important first step in creating a vision for the future. This ensures that the articulated vision has roots in reality and may be achievable. Working with community and regional planners, residents, and business owners is also necessary to ensure the community is represented in the vision. Community buy-in is crucial to facilitating future implementation.

3. Prioritize based on trajectory of neighborhood change in station areas

Why: Gentrification and displacement are two major equity concerns when low income neighborhoods and communities of color see public investment in the form of new transit service or private development of housing, office space or retail. Understanding the existing trajectory of neighborhood change (is the community becoming higher income or lower income, losing cultural amenities or historic businesses, etc), can help identify the right kinds of policy interventions that are necessary. This understanding can also help prioritize investment in affordable housing, economic opportunities, and small business retention, or can coordinate stakeholders to become more proactive.

How: There are a couple of key questions that help to elucidate if and how a neighborhood is changing. Are station areas or nodes in more residential neighborhoods or are they employment centers? What is the strength of the housing market? Is the housing stock older and low cost? Is there a high proportion of renters or elderly homeowners? What patterns of residential segregation and poverty exist? What is the income diversity of residents, and is there evidence today of gentrification or disinvestment? These are questions that should be analyzed both today and in the past to determine the existing trajectory of change and potential threats or opportunities. Regional and local community advocates may lead regional TOD planning that incorporates this approach. The [Mixed-Income TOD Action Guide](#) is one tool that can help local communities identify how their neighborhoods may be likely to change in the future.

4. Identify TOD opportunity from development perspective

Why: Successful TOD requires more than just new development (and sometimes new development is not part of the picture at all), but understanding the potential for development near transit stations or in activity nodes can identify short-term vs. long-term opportunities and help regional players plan accordingly. This approach can also clarify what kinds of investment station areas and nodes need to help them become TOD-ready, and can identify places where small publicly funded investments may promote significant private development activity. Supportive services like grocery stores, health clinics, childcare centers, and small businesses can ensure the viability of TOD while improving quality of life, health outcomes, and economic opportunity for area residents.

How: There are several key factors that can identify the potential for TOD from a development



perspective. One is whether land is available for development, and what the challenges to developing that land (small parcels, environmental issues, etc) are. Another is whether there is already market activity. Transit does not create a market for development, and so neighborhoods that have a strong or emerging development market will be able to build on that momentum for TOD. Finally, understanding the urban form around stations or nodes, whether the area is walkable or has other TOD-amenities, is key.

5. Plan for transit-supportive TOD

Why: All successful TOD should be transit supportive, but there are a few elements of TOD that are particularly important to supporting ridership. A regional TOD strategy can identify stations where small access improvements may leverage large changes in station access modes (shifting from the park-n-ride model to walking, biking, and taking transit.) Thinking about development around transit stations and at major nodes in terms of ridership can also help make the case for incorporating higher densities near transit. This approach can also link regional goals of concentrating jobs and growing without sprawl to the goals of transit agencies, including increasing ridership during off-peak hours.

How: This approach uses some of the same methods described above but integrates metrics or models where those classifications (existing conditions, vision for future land uses, potential for undeveloped land be transformed, infrastructure needs) are linked to transit ridership projections. This approach can be useful because it quantifiably defines places by their density and existing station connectivity. Transit agencies and regional transportation planners (MPOs) may lead the type of approach.

Case Studies

Baltimore, MD:

In the Baltimore/Central Maryland region, the Central Maryland Transportation Alliance, a diverse coalition of corporate and civic leaders, drove the regional TOD planning effort, with community advocates pushing for a focus on social equity. Central Maryland and Baltimore have struggled to maintain economic vitality, CMTA saw the regional TOD planning process in part as one way to leverage some of the more urban-centered development the region was seeing. The community advocates pushed for an agenda that focused on concerns of gentrification and displacement, prompting an analysis that looked at the trajectory of neighborhoods along existing rail corridors and proposed corridors.

Ultimately, the Central Maryland Transportation Alliance and a Steering Committee of local, regional, and state agencies, non-profit advocates, and philanthropic organizations developed a strategic vision for transit-oriented development in the Baltimore region. The strategy identified regionally important sites for transit and TOD investments, lead stakeholders, and a timeline for implementation. Based on data and analysis, the strategy created a methodology for approaching TOD that can be used by multiple stakeholders in making investment and resource allocation decisions. The methodology identified not only priority regional locations for TOD investment—the “where” of TOD—but also created a framework for approaching development and multi-modal transportation investment in any location—the “who”, the “what”, and the “how” of TOD. The CMTA framework is intended to be a tool not just for the major regional stakeholders, but also a means for engaging individuals and local communities around the potential benefits and tools for realizing high-quality TOD in the region.



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You can read more about the Central Maryland Transportation Alliance [here](#). The Central Maryland TOD Strategic Plan can be downloaded [here](#).

Twin Cities, MN:

In the Twin Cities, the Metropolitan Council (Met Council) acts both as the Metropolitan Planning Organization (MPO) and the major transit agency, providing bus and fixed-guideway transit service throughout the region. The region's diverse context requires the Met Council to serve urban, suburban, and more rural communities simultaneously. The region has been building up their transit network since 2004 when the first light rail corridor in the region, the Hiawatha line, opened.

The Met Council and a broad consortium of partners in the Twin Cities were awarded one of HUD's regional planning grants in 2010. The consortium has created the Corridors of Opportunity (CoO) initiative. Developed to promote sustainable, vibrant, and healthy communities, using the region's emerging transit system as a development focus, CoO is funding projects in seven corridors of existing and planned transit corridors in the region that use a variety of transit technologies. These include the Southwest LRT, Bottineau Transitway, Gateway Corridor, Cedar Avenue BRT, Central Corridor, Hiawatha LRT, and Northstar Commuter Rail.

Some of the key guiding principles of the CoO initiative include: developing a new model for transit planning that aligns transportation decisions with land use and affordable housing development, engaging historically under-represented communities in planning and decision-making, expanding access to jobs and affordable housing, enhancing the region's economic competitiveness, aligning public, philanthropic, and private resources to attract private investment, and accelerating expansion of the transit system.

Read more about the Corridors of Opportunity Initiative at the Met Council's [website](#).

Learn about a subregional initiative focused around the Central Corridor light rail [here](#), and how a health impact assessment helped African American and immigrant residents prioritize their TOD goals [here](#).

Salt Lake City, UT:

In Salt Lake City, scenario planning led to strong and lasting regionalism. Envision Utah transformed how planning is done in the Salt Lake City region. The regional planning process began with an extensive series of regional-level charrettes that brought together stakeholders and constituencies not traditionally associated with transit planning, such as faith-based organizations and public health advocates, in addition to residents, elected officials, developers, conservationists, and business leaders.

The outcome of that process was the 1999 Quality Growth Strategy that included seven primary goals, with increasing transportation choices (and transit service in particular) and affordable housing for individuals and families at all life stages and income levels primary among them. Since then, the region has reaffirmed these values and is working towards implementing them through the Wasatch Choice 2040 Vision. The Vision identified a series of growth principles to guide development decisions and make the transportation system more efficient and cost-effective.

The region has committed to focusing growth in a variety of activity centers across the region, many of which are coordinated to the existing and near-term transportation system: freeways, rail lines, rapid busways, and key boulevards. New transportation investments will be planned to serve these existing and growing activity centers and areas of growth, creating



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a positive cycle of growth of transportation investment in compact communities.

Learn more about Wasatch Choice 2040 [here](#). Learn more about Envision Utah [here](#)

Additional Resources on Regional Planning for Transit and TOD

- [TOD 205 – Regions and TOD: the Big Picture](#) and the [Regions](#) page on the Reconnecting America website.
 - [Transit-Oriented Development Tools for Metropolitan Planning Organizations](#) is a guide for what MPOs can do to support TOD.
 - The Bay Area, CA, where the MPO created a [TOD Policy](#) to ensure that places with new transit investment were taking on a reasonable share of the region's housing needs, and where [Priority Development Areas](#) have been used as an organizing principle for identifying cities in the region willing to take on increased densities in exchange for being prioritized for infrastructure and other funding. One transit agencies operating in the Bay Area, BART, created a [Station Access Typology](#) with access mode share targets to help shape investment strategies in station areas.
 - The Boston region's [MetroFuture](#) plan is being supported by a 2010 Regional Planning Grant from HUD, which you can read more about [here](#).
 - Portland, OR, where the regional planning agency has used quantitative analysis to create a [TOD Strategic Plan](#) and a [High Capacity Transit Plan](#).
 - [Charlotte, NC's Centers, Corridors and Wedges](#) is an example of a combined approach.
 - [Los Angeles Metro's Creating Tools for Successful TOD](#) is an example of the first approach.
 - [Denver's TOD Strategic Plan / DRCOG Metro Vision 2035](#) are examples of the second approach.
- [Mixed-Income TOD Action Guide](#) helps practitioners identify the most appropriate and effective planning tools for supporting affordable housing and mixed-income neighborhoods near transit.
 - For approaches on how to identify communities that may be gentrifying, try Professor Karen Chapple's [Mapping Susceptibility to Gentrification](#) and Stephanie Pollack's [Maintaining Diversity in Transit-Rich Neighborhoods](#).



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The Housing and Transportation Affordability Index

Sustainable Development Metric and Broader Measure of Affordability

The H+T Index was designed to enable individuals, planners, and policymakers to more fully grasp and act on the relationship between development patterns, transportation behavior, and household transportation costs. The Index helps regions plan for and accommodate sustainable and affordable growth by providing a lens of location efficiency through which to view policies and plans. At the most basic level, it helps decision makers frame policy and program recommendations in ways that are more easily understood by the general public and therefore may help gain their support for new initiatives. H+T data can also be integrated into trend analysis, goal setting, performance measurement, scenario evaluation, competitive award processes, site selection, and housing counseling services.

The H+T Index is designed to answer the question:

“If a typical household in this region wanted to live in this neighborhood, what proportion of its income might it expect to spend on housing and transportation?”

Housing Costs + Transportation Costs

Income

The basic idea is to add housing costs to transportation costs and then divide by income, as shown above, for each Census block group in a region. CNT’s research shows that different development patterns produce great variation in household transportation costs. However, this relationship is generally not taken into account in

home-seeking behavior, local and regional planning scenarios, policies that guide development, and infrastructure investment decisions. Typically a home is considered within one’s budget if it costs no more than 30% of one’s income. This affordability standard has contributed to new housing markets dominated by low-density suburbs with low-cost housing built on less expensive land far from jobs and everyday amenities. One of the downsides of such communities is a high degree of car dependence, expenses that are more difficult to track than one’s rent or mortgage because payments are disaggregated.

Indeed, it shows that development patterns in many places produce lower cost housing at the expense of spending more on transportation. Put another way, the Index provides a measure of “location efficiency,” i.e. the attributes of the built environment that allow people to live and conduct everyday travel at a lower cost. Incorporating transportation costs into the affordability equation changes our understanding of the cost implications of different development patterns and location choices. Consistently across regions, areas with higher residential density, a mix of uses, multiple transportation modes and proximity to employment centers offer greater affordability when housing and transportation costs are combined. The H+T Index highlights how the decisions we make about how to grow affect the bottom-line for a community’s residents--and shows the benefits of growing differently.

Accessing H+T Index Data from htaindex.org: The Basics

Images of maps and summary data can be taken directly from the free H+T website and inserted into a presentation or document. For example, in Figure 1 below the map and caption ***quantify the “shrinking affordability” phenomenon in***



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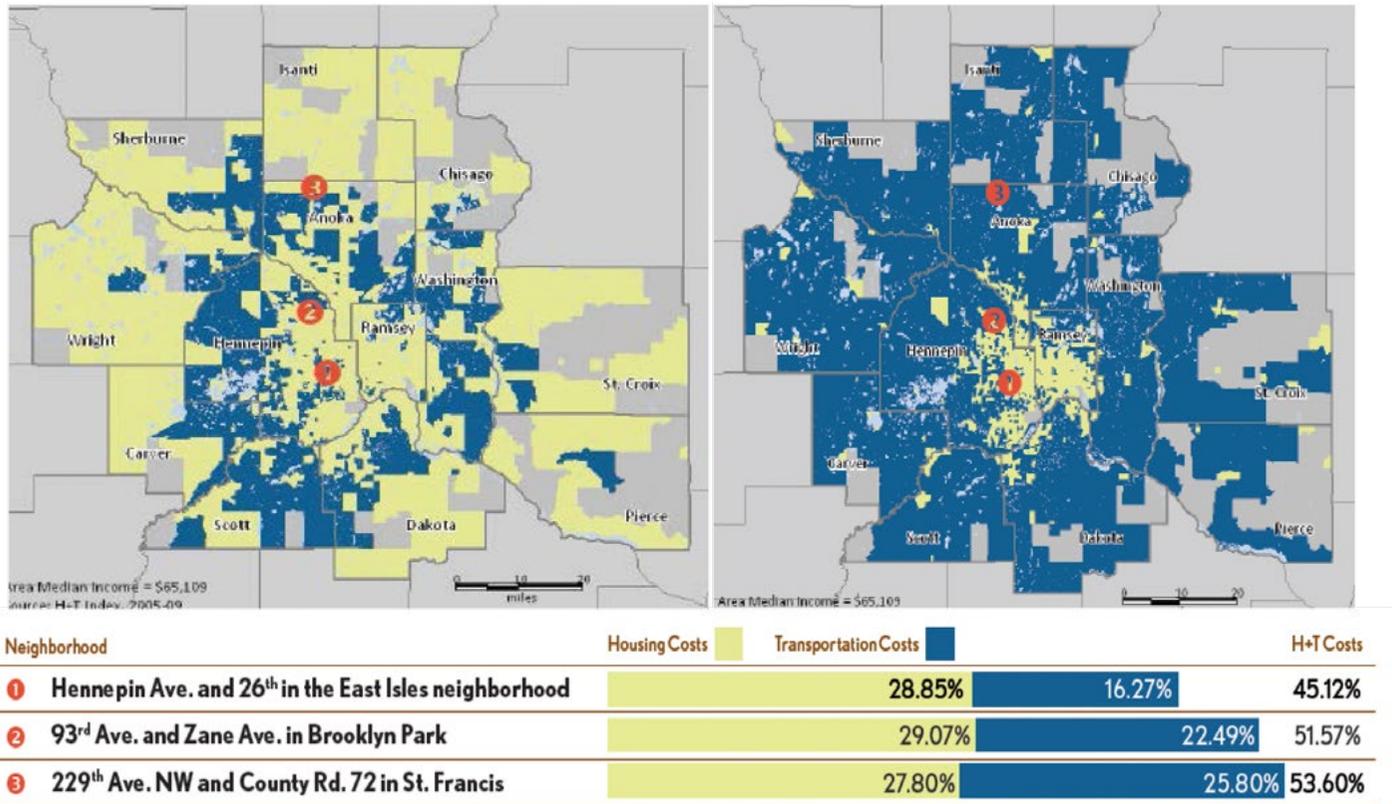


Figure 1: At left, the 30% affordability standard for housing costs shows that 79% of neighborhoods are affordable to the typical Twin Cities area household (yellow). At right, a 45% standard for H+T costs shows that affordable options are more limited (48% of neighborhoods, in yellow) and centered around the urban core. This “shrinking affordability” phenomenon is widespread across regions. Source: Center for Neighborhood Technology 2009 H+T Index.

terms of neighborhoods, while the bar chart compares neighborhood-level data on cost burdens for the typical household: Both the maps and values shown in the bar graph and caption can be obtained from the H+T Index website (the red location dots and the bar graph itself were created separately). Also on the H+T website you can: **Quantify the underlying characteristics that produce these outcomes, such as residential density, transit access, intersection density, and so on.**

- **HOW:** The website allows the user to generate maps of each input variable at various scales and to isolate the neighborhood-specific characteristics down to the block group level.
- **WHY:** The benefits of more compact development can be illustrated by juxtaposing a map or table

showing residential density for a handful of familiar neighborhoods against one showing estimated vehicle miles traveled and a third showing transportation costs in terms of dollars per month.

- **NOTE:** Some variables, such as residential density, are easier to understand and to explain than others, such as employment access. Also, please keep in mind that the dollar amounts are estimates generated to highlight the relationship between development patterns and transportation behavior; the absolute dollar amount

For guidance on where exactly to locate the data and maps described here, see the H+T website User Guide and the archived H+T: Nuts and Bolts presentation located on the Learning Network website.



estimated in a place is less important than the degree of variation between that place and another.

Obtain tables that summarize the data you are looking at.

- **HOW:** The website automatically provides the minimum, maximum and average value for whatever data element and boundaries are currently on the screen, as well as how the data is distributed across the community between the min and the max.
- **WHY:** Information can be more meaningful for performance measures and public engagement if it is expressed in terms of people, households, or neighborhoods. For example, Figure 2 shows 94.8% of the 2009 population of northwestern Indiana resided in a block group where the regional typical household would find housing costs affordable, using the conventional affordability standard (30% of income).

Criteria	Population	% of Population
Insufficient Data	0	0%
< 30 %	720,714	94.8%
30 +%	39,745	5.2%
Total	760,459	100%

Figure 2: Nearly 95% of the 2009 population of northwestern Indiana resided in a block group where the regional typical household would find housing costs affordable, using the conventional affordability standard (30% of income).

Source: Center for Neighborhood Technology 2009 H+T Index.

- **NOTE:** It is important to correctly interpret these tables. For example, it would be incorrect to interpret Figure 2 as saying 94.8% of northwest Indiana households in 2009 could afford their home while 5.2% could not.

Compare data for different income levels.

- **HOW:** Select a different income level for the “model household” from one earning 100% of area median income (AMI) to one earning a moderate income (80% of AMI). Or select a household earning the

national median income.

- **WHY:** Using maps/data modeled for moderate incomes illustrates the constrained choices available to these households under historical development patterns. For a multi-region comparison or ranking, e.g. for a set of peer regions, the income factor used to model the data in each region should rely on the national median income for a fair comparison.
- **NOTE:** The national H+T dataset does not enable income specification beyond the three settings described here. CNT generates custom H+T data (for example, for households earning 50% of AMI) for a modest fee; however, please keep in mind that the unique value of the Index is to highlight the impact of differences in the built environment.

Different Years of H+T Index Data and Related Tools

There are currently two national H+T datasets: the 2000 H+T dataset that covers 337 metropolitan areas, and the 2009 dataset that covers 877 metropolitan and micropolitan areas. At the time of this publication, the H+T website provides only the 2009 data. Contact CNT to obtain the 2000 dataset and guidance on how to compare values from the two periods in light of changes in Census Bureau collection methods. CNT also produced *Abogo*, a consumer-oriented tool that relies on the same transportation cost data as the H+T Index, but users simply enter an address to obtain the estimated transportation costs in a given neighborhood. It was designed to offer prospective homeowners and renters a unique source of information to supplement their evaluation of different neighborhoods.

Through its *Housing and Transportation Affordability Initiative*, the U.S. Department of Housing and Urban Development also has plans underway to construct housing and transportation affordability tools that can be used in HUD programs, and plans to launch them in late 2012.



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Ten Examples of Useful	Suggested Uses								Notes
	Viewable on H+T website?	Public Outreach	Reg'l / Local Planning	Reg'l / Local Goal Setting	Consumer Education	Program Evaluation	Site / Project Selection	TOD Policy & Planning	
1. Number/percent/location of block groups in a region / city / county where housing costs and estimated transportation costs together would be affordable to a median-income household	Y	*	*	*	*				Can be compared to "housing costs only" to illustrate importance of transportation costs
2. Number/percent of regional / city / county population (or households) living in block groups where housing and transportation would be affordable to a median-income household	Y	*	*	*					
3. Average household expenditure on transportation, in dollars per year, by block group, compared to the same value for the municipality, county, and/or region	Y	*	*	*	*			*	Calculate monthly or weekly values; also see Abogo
4. Average number of miles driven per household per year by block group, compared to the same value for the municipality, county, and/or region	Y	*	*	*		*	*		Items 4 and 5 are related to each other and to item 3; recommend using all together
5. Average number of cars owned per household, by block group, compared to the same value for the municipality, county, and/or region	Y	*	*	*		*	*		
6. Average value, by block group, of residential density, block size, intersection density, transit connectivity, transit access shed, and employment access	Y	*	*	*			*		See descriptions and source data for each here
7. Any of the values above, calculated for proposed or existing corridors and/or station areas	N	*	*	*	*		*	*	Block group data must be weighted for area of interest
8. Use 3 above to evaluate the location efficiency of block groups where public place-based investments have been made, are being considered, or for which funding is sought	N	*	*	*		*	*	*	Requires layering H+T data with local data
9. Change from 2000 to 2009 for items 1-5 above, by block group, municipality, county, region, and/or a "special geography" such as a corridor or station area	N	*	*	*		*		*	Contact CNT about comparison dataset
10. Change from 2000 to 2009 for item 1 above, compared to change in wages, overall cost of living, consumer price index, or other familiar measure over the same period	N	*	*	*	*				Contact CNT about comparison datasets



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Opportunities for Implementation: Specific Data Types and Uses

The most straightforward opportunities for implementation of H+T data are summarized in the table on the next page. The table is organized around ten metrics or comparisons that represent common uses of H+T data in planning, policy and public outreach activities. For each item, the table indicates whether the data for the metric or comparison can be viewed on the current H+T website, or alternatively how to obtain it. Please note that, while many types of data can be browsed on the website, they cannot be downloaded at this time; users should contact CNT for more information on obtaining whole datasets.

All data types and uses identified in the table assume that the user chooses H+T data to reflect the “regional typical household” (the size of which is set at the region’s average number of members per household, the number of commuters is the region’s average per household, and income is the regional median per household); however, as noted above, other income levels can be viewed on the H+T website or constructed on a custom basis.

We encourage grantees to browse these brief [descriptions of and links to uses of H+T data](#) by others, and to contact CNT to discuss your ideas about how to use the data in your area.

Smaller Communities

Large metropolitan areas were early adopters and continue to represent a significant proportion of the active users of the Index in a variety of planning and policy applications. Smaller communities have more recently begun to explore how they might use H+T data to better understand their development patterns and guide their growth. Smaller regions are likely to see less variation in estimated transportation costs

across block groups than larger regions because (a) they have fewer block groups overall to compare; and (b) those block groups are less likely to exhibit as wide a range of differences in residential density, transit access, employment density, and other characteristics that influence transportation choices. And, while the latest H+T dataset includes hundreds of micropolitan areas, some small regions may find that the dataset does not yet include every community or block group in their region. As a result, smaller regions have sometimes constrained the geography of their focus to a core municipality or county. Still, smaller towns can use the Index in many of the same ways as larger areas, i.e. to better understand and plan their development patterns, and to target investment to relatively location efficient places, even if there is limited public transit. As with larger communities, any neighborhoods that are compactly built and have a mix of uses are likely to offer greater location efficiency and affordability. While the two case studies below focus on larger regions, many of the ways H+T data was used can also be applied in smaller regions.

Case Studies

San Francisco Bay Area, CA

The Metropolitan Transportation Commission (MTC) sought to better understand the burden and geographic distribution of housing and transportation costs on lower-income households and to frame long-term strategies to addressing regional affordability. Based on the findings from a customized H+T dataset, [MTC recommended](#) that affordable housing production be tracked at the more refined level of transit station areas rather than by municipality, and suggested community-specific strategies to reduce H+T costs: downtown Oakland should preserve existing affordable housing and create mixed-income, mixed-use developments; inner-ring suburb San Mateo should identify obstacles to transit ridership



and introduce a car-sharing program; and ex-urban Antioch should capitalize on a proposed transit extension by ensuring the alignment and station areas are supportive of mixed-use development and pedestrian access. For their [Bay Area Burden](#) project, the Urban Land Institute (ULI) and the Center for Housing Policy (CHP) partnered with CNT to use H+T data to create profiles of representative Bay Area families, and showed that housing and transportation costs left many without sufficient resources to meet basic needs. An accompanying online [H+T Cost Calculator](#) tool allows individuals to estimate their combined housing and transportation costs using their own input parameters, see how changes to those parameters can impact expenses, and view the characteristics of urban form that explain the variation in transportation expenses across locations. At the same time, Bay Area advocacy organization TransForm used CNT's modeled transportation costs in its 2009 publication [Windfall for All](#) to examine the potential for CO2 reductions and private savings by improving public transportation. They estimated that Bay Area households with the best access to transit spend, on average, 39 percent less (\$5,450) on transportation each year than other households. Improving transit access to that level in all neighborhoods in the region would save households an estimated \$10.7 billion per year in transportation costs and CO2 emissions from transportation could be reduced by 42 percent. The strong interest in housing and transportation affordability in the Bay Area has resulted in tangible changes in the way regional agencies approach development issues. In 2009 MTC adopted combined H+T costs as a regional performance measure in their [Transportation 2035](#) Plan and established a reduction goal of 10 percent of the combined cost of housing and transportation as a share of household income for low- and moderately low-income households. MTC and the region's council of governments, ABAG, recently adopted the same performance target to guide the 2013 Sustainable Communities Strategy

(SCS) element of the regional transportation plan, a new component required by State law. MTC also allocated \$10 million toward a \$50 million revolving loan fund for affordable housing developers to finance land acquisition in select locations near rail and bus lines. MTC has publicly credited the establishment of the [Bay Area Transit Oriented Affordable Housing Fund](#) in part to the H+T Index, which helped them make the case for tackling the issue of housing and transportation affordability head-on.

Chicago, IL

Despite a reasonably priced real estate market and the second-largest public transportation system in the country, the Chicago region has struggled to meet the demand for affordable housing near transportation. A dataset customized for the Chicago Metropolitan Agency for Planning (CMAP) [showed](#) that the City of Chicago had the lowest average household transportation costs in the region at \$587 per month (with an average of 1.1 cars and 11,000 VMT per household per year), while outlying McHenry County had the highest average costs at \$1,076 per month (with an average of 2.1 cars and 24,000 VMT per household per year). A [recent state law](#) may help address this disparity in costs. The Illinois legislature in 2010 overwhelmingly voted to adopt the measure of combined housing and transportation affordability as a planning tool for five agencies and as a consideration for those agencies' investment decisions in metro areas. By encouraging public investments that take advantage of existing areas of greater density, the state is taking initial steps that contribute to lowering the cost of living for families. To support implementation of the new law, CNT undertook an H+T [analysis](#) of the 248 multifamily properties that the state housing agency financed over a seven-year period in the Chicago region. The analysis found that the state-financed developments are located in neighborhoods where residents have slightly lower average transportation costs compared



to the region as a whole, and that nearly nine out of ten (86 percent) of state-financed units are within ½-mile of a train station or ¼-mile of a bus route. Moreover, recent policy changes that encourage transit-oriented development (TOD) appear to be making a difference: the proportion of units with access to a train station increased from 32 percent to 54 percent when comparing the portfolio of developments approved between 2001–2004 to those approved between 2005–2008. As a result, residents in units in the most recent set of developments live in neighborhoods with transportation costs that are 7 percent lower than developments from the first period (\$600 annually). Creating more places that can support TOD is an important strategy to extend these benefits to more people. Chicago’s Metropolitan Planning Council (MPC) used H+T Index data in a [screening process](#) to identify 10 corridors that would support full-scale Bus Rapid Transit (BRT) while balancing community goals of increased livability, reduced travel time and lower environmental impacts. The average household transportation cost burden from the H+T Index served as one of two criteria related to the livability principle of promoting equitable, affordable housing. The growing set of experiences with using H+T in the Chicago region has begun to produce tangible results that will influence development patterns for years to come. At the regional level, CMAP has taken an important step toward achieving a more equitable and sustainable future by including the H+T Index as a measure in its [Go To 2040 regional plan](#), along with a goal to reduce combined housing and transportation costs for working families to 53 percent of income in 2015 and 45 percent in 2040. Several inner-ring suburban municipalities are working to

incorporate H+T information into the comprehensive plans through a CMAP [local technical assistance program](#), and CNT is independently assisting other area municipalities in using H+T data to help target affordable housing preservation efforts.

Modeling Methodology

The H+T Index estimates combined housing and transportation costs at the block group level using a regression analysis and publicly available data. Average housing costs for owners and renters are derived from the American Communities Survey, while average transportation costs are estimated using a statistical model. The transportation model estimates three travel behaviors – auto ownership, auto use, and transit use – using a regression analysis of household characteristics (income, size, and number of commuters) and urban form characteristics (residential density, job access, transit access, street connectivity and walkability). Representative cost factors are applied to the transportation behaviors, they are added to the housing costs, and the combined total is divided by the area median income to produce an H+T Affordability Index value for nearly 900 US

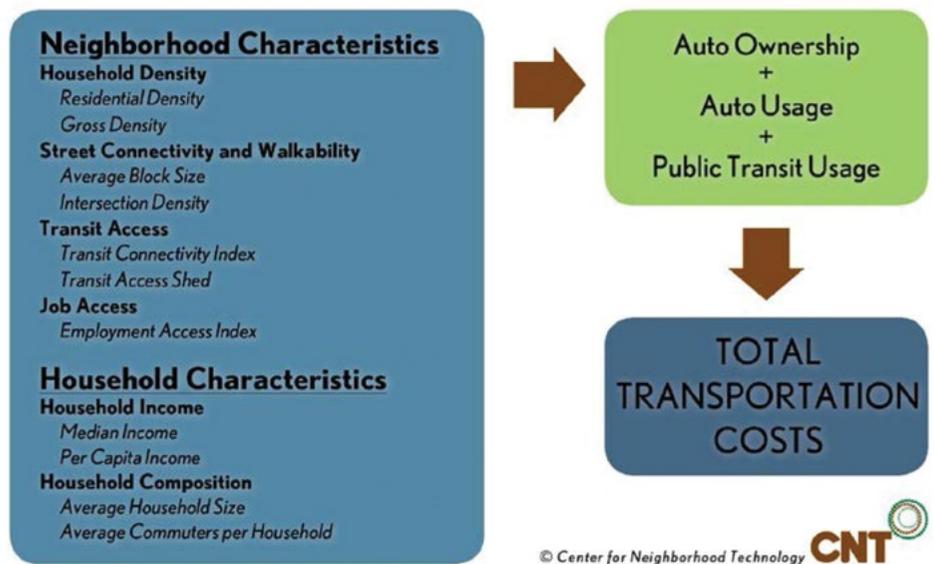


Figure 3: The transportation cost model.



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regions. Further information on methods and data sources is available [here](#).

More Information

- [H+T Index](#)
- [Examples of Applications](#)
- [Abogo \(address-based H+T tool\)](#)
- [H+T Index Methodology](#)
- [HUD Press Release: HUD Launches Development of a National Housing and Transportation Affordability Index](#)



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Developing Land Acquisition and TOD Funds

Introduction

Through the Office of Sustainable Housing and Communities (OSHC), the federal partnership between HUD, DOT, and EPA, regions throughout the U.S. have pledged to create more livable communities. Some of these regions have specifically identified real estate acquisition and development goals for affordable housing and community facilities. These regions are the target audience for this issue brief.

These regions have made this commitment in an era when the federal government continues to look for ways to decrease budget deficits, and government agencies, including HUD, are facing budget cuts and find themselves having to make very difficult decisions about decreasing funding for programs. Recently, funding for traditional sources of affordable housing and community facilities, like HOME and CDBG, have decreased considerably, and that trend is likely to continue. In response, many communities are looking for creative and sustainable ways to finance affordable housing and community facilities. One model that is gaining increasing interest from communities throughout the country is a “structured fund” model that combines several different forms of capital from public, philanthropic and private sources and balances the risk and return requirements of each in order to create financial resources that would otherwise not be available to affordable housing and community facility developers.

Communities with existing or expanding public transportation systems have shown particular interest in this model as they look for ways to ensure that low-income households are able to live near public transportation and take advantage of the increased access to jobs, education, healthcare, and opportunity that comes with it. Public transit investments have

the potential to catalyze significant investment interest from the real estate development community, which in turn can cause the price of land and property in some locations near transit to escalate quickly. This can put increasing financial pressure on existing low-income residents and make new affordable housing and community facility development on these parcels exceedingly difficult, if not impossible. Thus, communities like Denver and the San Francisco Bay Area have established structured fund models in order to acquire land for, or otherwise incentivize, affordable housing and community facility development in transit-oriented development (TOD) locations.

The above two factors: (1) declining resources leading to tougher decisions about allocation and (2) increased understanding about the importance of creating and preserving housing near transit, lead to the desire of many communities to create tools including loan funds, referred to as structured funds. The purpose of such funds is to incent and enable developers to acquire properties that reflect community priorities and hold them until permanent financing is available and market conditions support the community’s desired development plan.

Successful structured funds must be grounded in community wide consensus on need, and substantiated by community wide participation in the fund’s efforts, including regional and local government financial and programmatic participation.

This issue brief will attempt to help its readers, primarily the regional and local governments considering launching fund efforts, to better understand how a structured fund model works, where and when one might be utilized successfully, and the opportunities and challenges specific to utilizing Sustainable Communities or other federal resources in such a model.



Establishing the Need and Potential

Need: Structured funds are one of several tools that may be utilized to support the types of developments that communities seek. Before committing to establishing a structured fund of any sort, communities should first develop a shared understanding of market failures or gaps that are preventing or inhibiting the development of affordable housing and/or community facilities in their markets. Feasibility studies, discussion groups, interviews, and other tools can be used to determine the root causes of such market failures. Communities should determine if there are existing resources, both financial and policy that could be used to address these concerns. Examples might include Tax Increment Financing (TIF) set-asides, Inclusionary Zoning, Density Bonuses, Fee Reductions, Low Income Housing Tax Credits (LIHTC), New Markets Tax Credits (NMTC), Tax-Exempt Bonds, Housing Trust Funds, etc. In many cases, it may be much simpler to modify or better utilize existing resources to address market failures rather than establishing a structured fund.

Capacity to Perform: If communities determine that there is a need for a structured fund model, they should next consider whether or not such a fund would be supported in their market.

- **Local support:** Are there regional entities, municipalities, foundations, financial institutions, or other funders who have the financial capacity and/or desire to support such a fund? Have these entities pledged resources to seed the fund? Are local governments beginning to create the environment necessary for success, including appropriate zoning and parking?
- **Local development system:** Are there Community Development Financial Institutions (CDFIs), capable of operating and managing such

a fund? Are there developers who are capable of successfully utilizing the fund in order to meet the affordable housing and community facility needs? Existing structured funds in Denver and San Francisco Bay Area provide only short-term (up to 5-7 years) financing options. Are there sufficient long-term/permanent financing resources available to repay the structured fund's shorter-term loans?

- **Sizing:** How big does this fund need to be in order to make it a worthwhile pursuit and an effective tool? How big is too big? Too many resources may result in securing more property than can access permanent financing under the necessary timeline.

Structured Fund Basics

Example: An affordable housing developer seeks a five year loan for a property adjacent to an existing bus line and within a half mile of a new fixed rail stop opening in three years. The site is not zoned properly, but city wide efforts are underway to rezone the entire new rail corridor, with likely zoning in place in two years. The new zoning will allow the developer to determine parking ratios. A recent environmental report demonstrates that the site is clean for development. The developer is seeking a 90% loan to value, 4 year acquisition loan. Two banks will not consider the loan because they don't make acquisition loans for longer than 3 years. The local Community Development Financial Institution hasn't traditionally made loans with a four year term, without zoning or permanent financing in place, so they too have declined the loan. One bank is willing to make the loan but at 75% loan to value and a prohibitive interest rate, but by the time the developer identified this lender the site was under contract to higher bidder.

The need for creative financing solutions like structured funds exist when traditional capital providers are unable to provide necessary financing at terms acceptable to borrowers, allowing developers to



accomplish the work that meets identified community priorities. The risks embedded in the types of short-term acquisition or pre-development loans developers seek are often prohibitive due to zoning challenges, environmental clean up, and timing or availability of take-out financing. However, if these developments align with the goals and missions of municipalities, quasi-governmental entities, and philanthropies, it is possible to aggregate resources, creating a structured fund with resources scaled to meet community need, appropriate risk tolerance and terms.

With the right governance and oversight structure, structured funds can streamline approval processes, allowing borrowers to remain nimble and react quickly to opportunities that present themselves. This is just as important to the fund's ultimate success as the favorable financing terms because if the borrowers who have access to this capital are subject to a lengthy approval process, they may lose out on opportunities to competing interests who do not have the same constraints, particularly in high-demand locations like TOD.

The Capital Stack

As discussed previously, structured funds are comprised of multiple layers of capital representing varying degrees of risk and return expectations, otherwise known as the capital stack. Each layer of the capital stack can be comprised of one or more investors with a specific risk/return profile. While each individual fund will undoubtedly look different, there are some general "buckets" of capital that together make up a structured fund model:

Equity: It is common practice for any lender to require from any borrower some "skin in the game" in the form of his/her own investment in order to ensure that everyone's incentives are aligned. The same discipline applies here. Any developer who has access to the fund's favorable capital may be willing to invest

a portion of its own money, akin to a homeowner making a down payment for a mortgage.

Top-Loss: The most critical investment in the capital stack is top loss. Top loss investments provide the initial source of capital for structured funds, absorb the highest risk and expect the lowest returns (if any). In most cases, this role will likely be played by governmental or quasi-governmental entities like cities, counties, and Metropolitan Planning Organizations (MPOs). A significant top loss investment is essential to the success of structured funds because its presence makes possible the investments in the fund's remaining layers by more risk adverse organizations. Ideally, the top loss investor(s) would only seek a return of its capital, not on its capital. Think of this as a refundable grant. There are no set standards or requirements, but in order for the fund to have its desired impact, this layer often comprises roughly 20-25% of the fund's total capitalization. Note: This layer is the most critical and also the most difficult to raise. It is also the layer that potentially could be filled with Sustainable Communities Regional Planning Grant and Challenge Grant dollars (further discussion about this later).

Second Loss: This layer of the fund is most often comprised of philanthropic capital. Foundations are often willing to accept low financial return on their investment if the fund is directly supporting their missions. While grant funds can certainly play a role in structured funds, more and more foundations are beginning to make Program Related Investments (PRIs), which work well for this structure because they allow foundations to seek modest returns and revolve their funds while still supporting their purpose¹. Generally, annual returns on this layer of capital would range from 1-3% but can vary based on markets and investors. This layer often comprises 30-

¹ [IRS website](#)



35% of the fund's capital stack.

Senior Debt: Senior Debt is typically the last layer of the capital stack and is generally provided by commercial entities such as banks, insurance companies, and CDFIs (see below). These investors expect near-market returns while assuming the lowest risk of any layer in the fund. Many financial institutions have Community Reinvestment Act (CRA)² requirements, which may serve as a primary motivator to invest in structured funds. Expected returns in this layer will likely range from 4-7%. Because of the riskier nature of structured funds, investors in this layer generally prefer to comprise no more than 50% of the capital stack, thereby protecting themselves from financial loss.

Community Development Financial Institution: Similar to foundations, Community Development Financial Institutions (CDFIs) provide investments that support their own missions, but they generally also have a higher level of real estate lending expertise and are capable of serving as financial intermediaries. This puts CDFIs in a unique position to serve as both investors in structured funds as well as managers of structured funds. This, in turn, makes other fund investors more comfortable because they know the fund manager has the expertise and proper motivation to practice prudent underwriting and fund stewardship. CDFIs can come in all shapes, sizes, and financial capacity. Depending on the size and capacity of CDFI's operating locally within a community, regions may need to look to larger, multi-regional or national CDFIs. Communities can learn more about CDFIs in their markets by looking [here](#).

Other Elements to Consider

While many structured funds will generally share the characteristics and capital stack elements described above, the similarities end there. There are many

other elements to these funds that will vary based on market needs, real estate fundamentals, investor requirements, and other characteristics. Some of the critical considerations are borrower identification, eligible uses/loan products, and governance/structure.

Borrower Identification: Before going through the process of raising investments to capitalize a structured fund, communities need to first identify appropriate end-users or borrowers of the fund's resources. Fund investors from every layer are going to want to know that their money ends up in capable hands. This generally means financially strong developers with a proven track record of successful affordable housing and community facility development. There may be several entities that meet this requirement, or in some cases, there may only be one or two. Consider whether these organizations should be pre-approved borrowers with financial covenants required or whether capacity exists on the fund management side to assess the financial strength and development capacity of multiple borrowers on a loan application basis.

Eligible Uses/Loan Products: What is the fund's ultimate purpose? This goes back to establishing the need. Based on extensive analysis, communities must determine what sorts of financial products a given fund will provide in order to correct market failures. Are acquisition loans needed? Pre-development loans? Bridge loans? What types of real estate developments are desirable? Is affordable housing the only acceptable use? Non-profit office space? Healthcare facilities? Educational facilities? There are a multitude of financial products for a multitude of uses that any structured fund can theoretically provide, but it needs to be clear from the beginning what those eligible uses and products look like and what general terms are associated with each.

² Federal Reserve website



Governance/Structure: Communities considering structured funds need to be very thoughtful about how the fund will operate. First, who will serve as fund manager? As previously discussed, strong CDFIs ought to be capable of serving in this role, but fund management can take on many definitions. Who oversees the general fund strategies? Is there a board or advisory committee? Who has the authority to make individual loan approvals? Second, where is the fund's capital maintained? Some structured funds can be set up as their own "off-balance sheet" entities. This structure requires significant legal expenditures to ensure it is set up properly, but may be the preference of many investors. Alternatively, funds might be held by a CDFI or other fund manager in an "on-balance sheet" approach. This structure does not require as many lawyers or contracts, but it does require that investors have confidence in the fiduciary responsibilities of the fund manager.

Utilizing Sustainable Communities Grants in a Structured Fund

Regions who have received a Regional Planning or Challenge from OSHC and who have indicated intent to utilize the funds for acquisition and development financing have an opportunity to utilize all or a portion of the grant funds as seed capital or "top loss" for a structured fund. There are several regions throughout the country in various stages of this process and many are learning that while it is a potentially exciting opportunity to create significant leverage, it is not without its challenges. While supporting grantees in fulfilling the commitments in their grants, it's important to verify initially that community support for the effort is fully in place. The process of verifying community support can entail documenting the need, presenting it, and receiving specific commitments from local and regional governments related to the fund itself or

the corresponding local environment or permanent financing.

For many reasons, the OSHC dollars can be ideal for filling the critical top-loss layer of any structured fund. They are grant dollars and therefore do not come with an expectation of financial return. There are not as many restrictions on these dollars as there are on similar federal housing resources such as HUD HOME and CDBG funds. And there are no geographic limitations associated with the dollars – they can be utilized throughout any region in the country.

Along with these positive aspects, regions should also be aware of the potentially negative aspects of working with OSHC grants and work through them with OSHC prior to closing structured funds. First, be sure to understand whether or not these funds have the ability to 'revolve' or be used more than once to make loans/investments in real estate. Part of what makes structured funds so powerful is that the dollars have the potential to be invested, repaid, and invested again, perhaps several times over during the life of a structured fund. Without that ability, the potential impact of a structured fund is limited.

Second, regions should also be aware that OSHC funds have additional requirements when utilized for property acquisition. Specifically, acquisitions utilizing federal funds trigger the National Environmental Policy Act of 1969 (NEPA) process, which requires a qualified environmental review of the property being acquired. Part of the intent of structured funds is to be able to act nimbly and react to market opportunities. For high-demand locations, which TOD sites often are, sellers are not likely willing to agree to a purchase and sale option contingent upon an environmental review, particularly if there are prospective buyers who are not subject to that requirement.



Staff at OSHC is aware of these and other challenges and are working through them with grant recipients, but it is still critically important that regions considering establishing a structured fund, particularly one that will provide acquisition financing, have discussions regarding this issues with their grant administrators prior to getting too far down the road.

Conclusion

On behalf of Team Implementation, congratulations to all the regions who have been awarded OSHC grant funding and thank you for your interest in structured funds as a potential tool to create the types of livable communities you envision. Keep in mind that structured funds are innovative and exciting tools but they are by no means the only solution, nor are they substitutes for effective state, regional, and local policies and tools supporting affordable housing and community development. Should your community decide to pursue a structured fund model, Team Implementation urges you to reach out for assistance and learn from the regions who have navigated this process before you. There is a large support network of high-capacity organizations willing to offer expertise, advice, and technical assistance throughout this process. All you need to do is ask!

Additional Resources on Developing Land Acquisition & TOD Funds

- [Enterprise Community TOD Page](#)
- [Strategic Economics Publications](#)
- [Bay Area TOAH Fund](#)
- [Central Corridor Funders Collaborative](#)
- [Denver TOD Fund](#)



Redeveloping Brownfield Properties: A Regional Approach

Introduction

Brownfields are former industrial or commercial properties where their future reuse is affected by real or perceived environmental contamination. At the heart of the brownfield challenge was the 1980 passage of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) and its state equivalent laws holding past, present, and future property owners liable for the full cost of cleanup, regardless of whether they actually caused or contributed to the contamination. While this liability scheme has proven highly successful in many ways—forcing responsible parties to acknowledge and pay for their pollution—a major side effect has been that real estate transactions involving any contaminated or even perceived to be

contaminated sites virtually ground to a halt.

In 1995, in response to this redevelopment challenge, the U.S. EPA created the brownfield program to delineate those sites that are slightly or lightly contaminated from the larger and more complex Superfund sites, and encourage their cleanup and redevelopment. The EPA defines a brownfield as “a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.” This definition frames the brownfield issue as a real estate problem; real or perceived contamination impeding reuse. Cleaning up a brownfield often results in the removal of a potential threat to human health or the environment. However, the EPA and the states recognized that since

Bethlehem Steel, Pennsylvania

The Brownfield Approach

From the mid-1800s Lehigh Valley was home base for Bethlehem Steel one of the largest shipbuilding and steel manufacturing companies in the world. During its heyday, it was the most powerful symbol of American industrial manufacturing leadership. Bethlehem Steel’s demise is often cited as one of the most prominent examples of the U.S. economy’s shift away from industrial manufacturing.

The 1600 acre site is now a national model for coordination

between federal, state, and local agencies. This collaboration led to federal and state liability relief for new developers, a site-wide environmental investigation and assessment that led to an overall soil and groundwater management plan minimizing development uncertainty.

The site of the company’s former main plant is now home to an arts and entertainment district called SteelStacks. The site is currently home to a contemporary performing arts center, called the ArtsQuest Center, and the Sands Casino Resort.

Another 500 acres was purchased

in 2007 by Majestic Realty for a new industrial park that will generate thousands of new family-supporting jobs. Ground broke this month on a new centralized distribution center for the worldwide shipment of Crayola products. Crayola, the maker of world famous crayons, consolidating their current warehouses, plan to operate the new center beginning in spring 2013.

Majestic cited the coordination of state and federal regulations, and support from the local community, as the single biggest reason they invested in the Bethlehem Steel site.



the problem is grounded in the market forces of real estate development, so too must the solutions focus on tipping the balance of those market forces in favor of reuse. This brief outlines the brownfield challenges, discusses the available financial, technical assistance, and regulatory tools, and provides case studies from successful brownfield communities.

To minimize liability exposure, project delays, and overall cost, communities must proceed carefully in planning, structuring, and managing the revitalization of environmentally impaired properties. Today, environmental risks associated with redevelopment are becoming more quantifiable and manageable, and there are many examples of successful developments on former brownfield sites. This is in part due to the maturation of the regulatory community and the associated increased comfort level of the lending community.

Brownfield redevelopment results in tax base growth, job creation, neighborhood revitalization, and environmental protection. Different states have established regulatory and financial programs that, combined with federal resources, have cleaned up thousands of sites, generating tens of thousands of jobs. Communities like Milwaukee, Emeryville, and Pennsylvania's Lehigh Valley have demonstrated how partnerships, financial tools, and complementary regulatory environments facilitate brownfield redevelopment.

Understanding the Nature of the Contamination: How Big is the Problem?

Approaching a brownfield redevelopment project requires a focused strategy to understand property conditions. Environmental due diligence identifies liabilities that may not be evident to the untrained purchaser, but can be economically significant. The investigative process has evolved into a methodical

series of steps that can culminate in a variety of industry accepted reports. An early understanding of the nature and extent of the contamination is the first step in brownfield redevelopment.

Sometimes perception is the largest obstacle to redevelopment. Often there exists a prevailing local story that a property is dangerously contaminated which can seriously compromise community support for redevelopment. However, many case studies have shown that once a thorough environmental assessment is completed it can often show little or no contamination.

The Town of Truckee is a rustic community in the Sierra Nevada mountains just west of Lake Tahoe. Adjacent to the town's very quaint and historic downtown a 40-acre railyard lay vacant. While the railyard site was the obvious place for future growth, the long standing and prevailing myth that the site was dangerously contaminated was a significant obstacle to its redevelopment. The town's first step was to visit the state and local regulatory agencies and gather all the existing environmental documents for the site. Even though, in addition to the railyard activities, a timber mill had operated on the site at one point in its history, based on the public records searches, the town was able to dispel the prevailing myth that the site was seriously contaminated. The site is now under entitlement for a residential and retail mixed use project that includes a new City Hall and a critical creek restoration project for fish habitat.

The type and extent of the contamination is another significant redevelopment driver. Hydrocarbons from former gas stations or high levels of lead in the soil from historic atmospheric deposition (when lead was used heavily in gasoline) are relatively easy to address and remove during a cleanup or site construction. Other more persistent contaminants (like dry cleaning solvents) present a more serious challenge because they do not easily biodegrade and because they



move quickly through the soil and can contaminate groundwater. A significant redevelopment challenge can arise when persistent contaminants have reached groundwater. This is when having a good plan in place is the best strategy for keeping the environmental challenges from stalling out your redevelopment plans.

The Value of a Plan

Understanding the type and extent of the contaminants of concern on your site is the first step in putting your plan together. As in the case of Truckee, early reviews of all existing environmental documents were a major factor in moving the project forward. The planning begins with a review of all existing environmental documents, proceeds to testing of the soil and groundwater, and ultimately culminates in a cleanup plan that often is tied to the intended use of the property. Often cleanup requirements are more stringent for a residential development than for a commercial or retail development.

Area-wide planning can help realize both efficiencies and economies of scale, and attract private sector investment and stretch your public sector investments. Site assessment and cleanup is more efficient and cost effective when clusters of sites are targeted. For example, soil sampling and trenching across multiple sites saves time and resources.

A significant benefit of area-wide planning is that it provides the development community with information about existing conditions, planned public investments, community intentions and subsidies available for particular projects—all of which strongly encourage private investment.

By looking beyond the boundaries of individual sites, area-wide planning is an opportunity to examine a community's assets and needs. This comprehensive assessment makes it possible to prioritize public investments and identify other investments (transportation infrastructure, affordable housing, or educational services) and achieve a community's vision beyond brownfield cleanup.

City of Emeryville, California

Area-wide Planning—the Smart Plan

The City of Emeryville was created by industrialists in the late 1800's who wanted to avoid the taxes and regulations of Oakland and Berkeley. The city was home to paint manufacturers, heavy equipment makers, and scrap yards. Emeryville has transformed itself from an industrial and manufacturing community to one featuring mixed-used commercial and residential uses.

The City strategically used U.S. EPA brownfield grants to characterize and assess their environmental concerns on an area-wide basis. This led to their area-wide plan approach to groundwater and soil issues, enabling the state regulators to shift their attention to the most contaminated sites and allowed the City to assume regulatory authority for low-risk sites. This was accomplished via completion of a MOA by which the City

essentially gained authority to process environmental sign-off for soil and groundwater investigation and cleanup.

Interested parties were provided with simple “look-up” tables for cleanup numbers and pre-approved procedures for mitigation of soil problems.

The City is now home to Pixar Animation Studios, a new regional Amtrak station, and thousands of new biotech and cleantech jobs.



Engaging the Stakeholder Community—Including Your Regulator

Whether it's for a single property or an area-wide plan, effective environmental planning is based on transparent and meaningful community participation. Consultation with established community networks, the regulatory community, and important stakeholders at the beginning of the planning process ensures that proposed redevelopment plans will be consistent with community desires.

State and federal hazardous waste statutes are administered by a number of different regulatory agencies. It is important to understand the various

regulatory bodies and their levels of involvement in brownfield redevelopment projects. It is equally imperative to establish a strong working relationship with your regulator and maintain open communication throughout the redevelopment process. Cleaning up all historically-contaminated sites to background concentrations or levels suitable to all uses is often not technically or economically feasible. As a result, cleanup strategies are increasingly designed to employ sustainable, long-term solutions that are protective of human health and the environment. Effectively communicating the environmental planning and cleanup strategies will be key to your redevelopment success.

Engaged community members can become valuable

Monroe, Michigan

It Takes a Community

The Downriver Community Conference Partnership whose objective is to create a collaborative process for small cities to share financial and technical assistance and achieve their brownfield redevelopment objectives. Under a progression of U.S. EPA assessment and revolving loan grants, the Partnership created a redevelopment model that identifies, investigates, and evaluates the potential future land use of selected brownfield sites within the participating communities. The Partnership also provides for effective community outreach and involvement in the redevelopment process.

Like many brownfield communities, Monroe is reinventing itself from the legacy of lost manufacturing jobs. The VenTower project in the town of Monroe is a beneficiary of the Partnership. VenTower, a fabricator and supplier of industrial-scale wind turbine towers, began manufacturing operations in September 2011 on a once-idled landfill.

The project got underway at a time when financing was becoming increasingly difficult due to economic conditions, so securing all available grants and loans was essential to make the project happen. With the assistance of the the Partnership, the project secured \$16.5 million

in state and federal financial incentives for the project, including a combination of state brownfield grants and loans; an EPA brownfield loan; state brownfield tax credits; brownfield Tax Increment Financing; and a Small Business Administration Section 504 Loan.

Other project incentives included an Act 198 Industrial Facilities Tax (IFT) abatement, MEGA jobs credits, and an Alternative Energy Tax Credit.

The project's success is attributed to multiple parties working together in a public-private partnership that was committed to the project's success.



leaders for the revitalization efforts, and can help limit unexpected opposition to projects when they are full community partners in development plans. Because neighborhoods plagued with many brownfield properties often suffer from other economic challenges, area-wide planning can become an important method of restoring the social fabric as well as the built environment. Meaningful community engagement is not simple. Real engagement requires an investment of resources to support community leaders as they drive the planning process. In many instances, public resources can be used to hire technical experts who can provide the community with information they need to participate in the planning process on equal footing with real estate and planning professionals.

Engaging community members, local businesses, community-based organizations, and other stakeholders is well worth the investment and can yield both tangible and intangible returns as neighbors, business owners, and community groups learn about and personally invest in redevelopment plans.

Where do I Find Available Technical Assistance and Funding?

For a number of reasons, it is difficult to secure either front-end or long-term financing for brownfield projects. Although financial institutions have become less nervous about lending on brownfield properties

Milwaukee, Wisconsin

Innovative Funding

In the early 1900s, Milwaukee was known as the “Machine Shop of the World” and the Menomonee Valley was its engine. Farm machinery, rail cars, and electric motors were all made in the Valley.

By the 1990s, as manufacturing practices changed, the Valley was abandoned and left with contaminated land and vacant industrial buildings. In 1998, the City of Milwaukee prepared a land use plan and secured various innovative funds that is now a national model for economic development and environmental sustainability: 300 acres of brownfields redeveloped, 33

new companies, seven existing companies have expanded, and more than 4,700 family-supporting jobs have been created. Seven miles of trails have been constructed, and 45 acres of native plants installed, leading to improved wildlife habitat and water quality.

Innovative financing tools

\$16 million Tax Increment District to remediate and build infrastructure.

New Market Tax Credit Program loans to industrial developers through the Milwaukee Economic Development Corporation.

\$24 million through 20 local,

state, and federal grants: HUD, EPA, EDA, FHWA, State Stewardship funds, and State Departments of Commerce, Natural Resources, and Transportation.

Up front negotiation for management of dirty soil onsite—saving the project \$10 million.

Cooperative agreement with Wisconsin DOT for highway fill elevated the site and netted \$1.5 million.

State-of-the art stormwater treatment facility covers majority of the property so developers don’t need their own basins; it cleans stormwater flows to the river and doubles as public park.



in the last decade, the possibility of high cleanup costs, long term liability, and loss of collateral are still significant considerations.

Further, with the exception of larger financial institutions, most banks do not have the in-house expertise needed to properly weigh environmental risks. Absent a viable responsible party or private developer investments, initial funding for brownfield projects often come in the form of public sector grants, which play an important role in most brownfield projects. There are many federal and state funding and technical assistance programs that have emerged over the last decade.

The U.S. EPA provides varying levels of technical and financial assistance for brownfield redevelopment and sustainable development through their brownfield, smart growth, and sustainability offices. Several other federal partners complement these programs with funding that support economic development, job creation, housing, and alternative energy. A summary of these programs can be found at cclr.org/news/publications.

There are also a variety of state financing mechanisms that help supplement the remediation and redevelopment of brownfields. The U.S. EPA's website provides links to each state's brownfield program, links to state's financing programs, and state contacts that can provide leads to technical assistance: www.epa.gov/brownfields/state_tribal/state_map.htm

The Center for Creative Land Recycling (CCLR or "see clear") is also a great resource for technical assistance and additional links to funding and technical assistance (www.cclr.org).

Conclusion

Implementation of a sustainable future depends on the ability of older communities to attract private investment capital. Such investments cannot be mandated, but they can be stimulated through various types of incentives to overcome the business-as-usual attitude.

Federal, state, and local requirements place constraints on the assessment, cleanup, and redevelopment of sites containing real or perceived contamination. It is important for communities to understand the range of legal risks and liabilities, the specific regulatory requirements, and the differing tools available for managing the risks in order to facilitate the cleanup and redevelopment process. It is highly beneficial to obtain appropriate legal advice and regulatory guidance early in the project planning process in order to develop an effective strategy for expediting the process, enhancing cost effectiveness, minimizing risks and bringing your community's vision to reality.

Additional Resources

Links at www.cclr.org/resources/links



TOD & Infill Infrastructure Finance

Introduction

Transit station and infill areas often require significant up-front investments in infrastructure and public facilities such as parks, streets, bicycle and pedestrian linkages, sewer and water systems, and parking garages to encourage walking and bicycling, improve access to transit, and attract and accommodate new private development. These types of infrastructure investments – and the infill and transit-oriented development (TOD) they enable – can have a positive effect on the environment, the economy, and public health by encouraging residents and workers to walk, bicycle, or take transit; reducing vehicle miles traveled; providing affordable transportation options; and facilitating more efficient use of land and other public resources. However, communities often struggle to pay for such infrastructure because it requires up-front investment. Moreover, because many of the benefits associated with these types of infrastructure accrue to the community at large, the costs of these facilities are often greater than can be supported solely by revenues either from the infrastructure itself or from the new development that the infrastructure enables, especially when the new development is incremental and occurs on multiple parcels with different owners. This issue brief provides an overview of the types of infrastructure needs typically associated with TOD and infill development, the challenges involved in paying for this infrastructure, key infrastructure finance terms and tools, and the process of formulating a successful infrastructure funding and financing strategy.

Defining TOD & Infill Infrastructure Needs

TOD is typically defined as a mix of compact housing, commercial, and other development located within walking distance of high-quality public

transportation. The core idea of TOD is to allow people with a wide range of incomes to live and work in places with a variety of transportation options, allowing them to take care of most of their daily trips by riding transit, walking, or bicycling instead of driving. TOD residents and workers benefit from the greater accessibility offered by the transit system, and generate new transit ridership to help support the system. Infill development, defined as new construction on vacant or underutilized sites within an established neighborhood or district, can similarly help reduce dependency on the private automobile by increasing the range of housing, employment, and other options available within a community. In addition, infill development can contribute to local economic development and help conserve rural and agricultural land. TOD often takes the form of infill development, but can also refer to greenfield or suburban development around a transit station.¹

TOD and infill can sometimes take advantage of existing, underutilized infrastructure systems, increasing the efficiency and reducing the costs of providing municipal services to new development. Often, however, TOD and infill proposals trigger the need for significant up-front investments in infrastructure and community facilities in order to accommodate higher-intensity development, encourage private investment, and/or connect residents and workers to transit stations and other amenities. This issue brief focuses on the types of infrastructure that local governments – often with financial support from state and federal agencies – have traditionally provided, including streets; sidewalks and crosswalks; streetscape improvements like trees, lighting, and benches; bike lines; parks and

¹ “TOD” and “infill” can be used to describe individual development projects, but in this brief are used more broadly to refer to development within an entire neighborhood or district.



open space; wet and dry utilities (e.g. sewer, water, storm drain, electricity); and public parking facilities.

The infrastructure needs of any particular area will depend on the capacity and design of existing facilities, and on the level of planned increase in development intensity. For example, in neighborhoods where the existing street network, sidewalks, and other infrastructure are designed to serve low-density development and auto-oriented mobility patterns, successful TOD/infill development may require new or improved pedestrian and bicycle facilities, roads, utilities, and public open space to support the increased population that higher density implies and encourage walking, bicycling, and taking transit. In places where the existing infrastructure is already designed to serve higher densities, existing systems may need to be upgraded in order to accommodate new population growth.

The Challenge of Funding and Financing Infrastructure for TOD and Infill

In addition to supporting compact development patterns, TOD and infill infrastructure improvements can help encourage people to walk, bicycle, and take transit, improving public health and reducing vehicle trips, household transportation costs, and greenhouse gas emissions. The inclusion of affordable housing and community services offers these benefits to lower-income households who need them most. However, precisely because so many of these benefits are conferred to the general public, infrastructure can be difficult to pay for – particularly given the fiscal constraints facing many local governments today. The nature of the challenge is different depending on whether the type of infrastructure in question generates revenue or not:

- **Revenue-generating infrastructure**, including utilities, toll roads, transit systems, and

often (though not always) public parking facilities: These services generate revenues for operations and maintenance by charging fees for use. However, public agencies may find it politically difficult to raise rates high enough to pay for significant new capital investments, or wish to keep rates low in order to encourage use (as in the case of transit) or meet other public policy goals.

- **Non-revenue-generating infrastructure**, including streets; sidewalks and crosswalks; streetscape improvements like trees, lighting, and benches, bike lines; and parks and open space: Access to these types of facilities is typically unrestricted and the benefits accrue to the public at large, including existing community members as well as users of new development. Because there is no charge to use these facilities, and because the benefits are widely spread, this type of development rarely generates any direct revenues to pay for construction, operations, or maintenance. However, while these types of improvements do not directly generate revenues, they can (if deployed appropriately) create value by opening up new development opportunities, improving quality of life, driving property value appreciation, and attracting new residents, workers, shoppers, and other users. As discussed below, capturing this value can be key to funding this type of infrastructure

To add to the funding challenge, infrastructure and community facilities often need to be in place before new private development can occur – either because additional infrastructure is required to support new uses, or, in a place with a weak real estate market, to make a location more attractive for developers, new residents, and employers.

Basic Terms and Tools for Paying for Infrastructure

There are two basic ways to approach paying for infrastructure: “pay-as-you-go” and debt financing. In a **pay-as-you-go** approach, an improvement is



made only once sufficient revenue is collected to cover the entire cost of the improvement. In a **financing** approach, the improvement is paid for immediately, typically by borrowing against future revenues – in other words, issuing debt (usually in the form of bonds) that is paid back over time. Either approach requires a designated **funding** – i.e., revenue – source to pay for the cost of the improvement itself and, when a financing mechanism is used, to cover interest and other costs associated with issuing debt. This section focuses on tools: particular funding and financing sources that local governments can use to pay for specific types of infrastructure. In contrast, a **strategy** is a plan of action that public agencies create and implement in order to achieve a goal, such as attracting new development or promoting walking, bicycling, and taking transit in a given area. Strategies for funding and financing infrastructure are discussed in the following section.

Traditionally, local governments have dedicated some portion of property, sales, and other jurisdiction-wide tax revenues to fund infrastructure, on the theory that infrastructure improvements benefit the community as a whole and will, in the long run, result in economic growth and higher tax revenues. In a time of severe fiscal constraints for many public entities, however, communities are increasingly looking for ways to leverage traditional sources of local government revenue and generate new sources to pay for TOD and infill infrastructure. Beyond general property and sales taxes, the tools that local governments and transit agencies use to fund and finance infrastructure fall into four broad categories: user fees, value capture, debt, and grants.

1. User fees charge users for utilizing public infrastructure or goods, and apply the revenues to some combination of operations, maintenance, and capital costs. As discussed above, infrastructure for which users pay fees is known as “revenue generating.”

2. Value capture refers to a bundle of tools that raise revenue by harnessing the increased property values resulting from public infrastructure improvements and/or a strong or strengthening real estate market. Value capture can entail the creation of a new assessment, tax, or fee (such as a special localized tax or development impact fee), the diversion of new revenues generated by an existing tax (as in tax increment financing), or a revenue-sharing agreement that allows a government agency to share in some of the revenues generated by developing publicly-owned land (known as joint development). Typically, value capture tools depend on new development and property value appreciation in order to generate revenue, and can therefore be used to pay for non-revenue-generating infrastructure.

3. Debt tools are mechanisms for borrowing money to finance infrastructure. Local governments typically access the debt market by issuing bonds. Some forms of debt, known as general obligation bonds, are secured by the “full faith and credit” of the issuer rather than the revenue from a specific project, and can therefore be used to finance infrastructure that does not generate revenue. Most types of debt, however, must be secured by revenues generated either directly by the infrastructure that the debt is used to fund (e.g., user fees), or within the geographic area that will benefit from the improvement (as in value capture).

4. Grants are funds that do not need to be paid back, and are typically provided by a higher level of government to a lower-level of government (e.g., from the federal government to states or localities; from states to local governments), or by a philanthropic entity. The federal government provides a wide range of grants and formula funding programs that are relevant for TOD/infill infrastructure needs, including for transportation, community and economic development, clean air and water, brownfield cleanup, parks and open space, and local and regional planning.



The applicability of any given tool to a particular place and project will depend on a variety of factors, including local market conditions, state laws, and local priorities. Some types of tools, including most value capture mechanisms, depend on a strong real estate market and property value appreciation to generate revenue, while others (such as grants) are less sensitive to market strength or present particular opportunities for weak-market places. In addition, some tools (for example, tax increment financing and special tax districts) are only available in places where the state or local government has passed enabling legislation. The availability of other sources depends on the extent to which state, regional, and local governments prioritize TOD and infill goals in allocating funding. For example, all metropolitan planning organizations (MPOs) receive federal Congestion Mitigation and Air Quality Improvement (CMAQ) Program and Surface Transportation Program – Transportation Enhancement (STP-TE) block grants,² but states vary in the degree of flexibility they allow MPOs to use in allocating those funds, and only some MPOs prioritize spending that money on TOD- or infill-related improvements.

Developing a Strategy for Funding and Financing Infrastructure

Understanding local market conditions, funding availability, and other existing conditions and determining the right combination of funding and financing tools are key steps in the process of developing an effective infrastructure finance strategy. In addition to providing a list of potential

² MPOs are federally-mandated organizations charged with planning for transportation improvements and distributing federal transportation dollars in urbanized areas throughout the United States. The CMAQ and STP-TE programs provide federal funding for transportation projects such as pedestrian and bicycle improvements, transportation demand management projects, and transit.

funding and financing sources, however, a successful infrastructure finance strategy can serve as a guide for implementation, allowing the public sector to proactively seek out opportunities and respond to changing conditions over time. Developing the right strategy for a particular place requires an ongoing, iterative process of assessing existing conditions; establishing a clear vision and goals; assigning responsibility for implementation; identifying and assembling multiple funding sources; and strategizing to overcome barriers and take advantage of opportunities as they become available.

1. Assess existing conditions. The strongest funding and financing strategies are based on a clear understanding of the local real estate market, specific infrastructure needs and associated costs, funding availability, state enabling legislation, and barriers such as outdated parking requirements or zoning regulations.

2. Develop a clear vision. In addition to guiding the form, function, and phasing of private development, a broad, long-term vision for a TOD or infill area can serve as a roadmap for public sector infrastructure investments. A strong vision allows a local government to prioritize the most critical improvements, while maintaining the flexibility to respond to changing market cycles and take advantage of funding and other opportunities as they arise. Moreover, a vision can help attract outside funding sources, including private investors as well as federal, state, and regional grants, by building enthusiasm and confidence among potential funders and developers.

3. Assign responsibility for implementation. TOD and infill strategies can involve many players in implementation, including various local government departments, transit agencies, MPOs, state and federal agencies, and private developers. Effective strategies consider which public agencies and private entities will play a role in implementation, and



which entity will take the lead in implementing each project. In some cases, it may be appropriate for one entity, such as a redevelopment agency, interagency working group, or public-private partnership (e.g., a business improvement district), to take the lead in visioning, coordinating implementation, and removing barriers to future development.

4. Look for multiple funding sources and partnerships to fill the gaps. Nearly all infrastructure projects require a combination of multiple funding sources, often including grants, some type of value capture mechanism, and user fees or other project revenues (such as revenues from a land sale). The appropriate combination of tools will depend on the types of projects that need to be funded, and may evolve over time as grant availability and market conditions change. For example, user fees may be appropriate when there is sufficient demand and political will to charge for a service, such as parking or utilities. Value capture mechanisms can be used to fund non-revenue-generating projects where local real estate market conditions permit. Local governments are also increasingly relying on private partners to help cover infrastructure-related costs that are difficult to fund using traditional sources. Potential partners may include private developers, local businesses, and universities, hospitals, or other “anchor” institutions that have a strong interest in the success of their communities. Foundations and community development financial institutions (CDFIs)³ may be interested in contributing to projects that contribute to the fulfillment of their mission.

5. Think strategically about overcoming barriers, prioritizing public investments, and utilizing funds as they become available. Communities rarely have sufficient funds to

meet all of their infrastructure needs upfront. Successful financing strategies look for whatever early sources of money are available to “get the ball rolling” in an area, rather than focusing on implementing the biggest and most complex projects immediately. Indeed, some barriers to attracting new development or achieving other goals may be overcome with minimum financial investment. For example, reducing or eliminating an outdated parking or setback requirement may help make new development feasible even in the absence of public capital investments. By starting with small steps and moving forward incrementally, local governments can help build market confidence, attract private investment, and create value, opening up future opportunities to fund larger and more expensive projects.

While this brief focuses on the process of developing infrastructure financing strategies at the district or neighborhood level, establishing a community-wide strategy and capital improvement program (CIP)⁴ can help a local government prioritize projects and allocate funding not only within an individual district, but also among different neighborhoods within a jurisdiction.

Case Studies

Developing a City-Wide Infrastructure Strategy

- In 2005, San Francisco, California adopted legislation requiring the city to annually develop and adopt a ten-year capital expenditure plan for all city-owned facilities and infrastructure. The capital plan is overseen by a committee that includes the directors of the city’s finance, planning, public works, transportation, and parks and recreation departments. [More information.](#)

⁴ A CIP is a short-term (e.g., one- to five-year) planning document that catalogues planned and ongoing physical development projects within a city, and usually includes a list of projects ranked in order of priority, as well as the costs, funding sources, and time frame associated with each project.



Formulating a Comprehensive Strategy

- As part of the planning process for the White Flint district in Montgomery County, Maryland, the county identified \$313 million in infrastructure improvements required to support the planned development of up to 9,800 new housing units and 5.8 million square feet of new commercial development. The White Flint Sector Plan identifies multiple potential sources for funding the required infrastructure projects, and includes a three-phase infrastructure/development staging plan intended to ensure that public facilities are provided in conjunction with private land development. [More information.](#)

Working with Key Partners and Combining Multiple Funding and Financing Sources

- Boulder, Colorado combined \$3.4 million in federal transportation funds with contributions from the City of Boulder, Boulder County, the Colorado Department of Transportation, the Regional Transportation District, and the University of Colorado to pay for the \$7.4 million Broadway Transportation Improvement Project. The project included the reconfiguration of an intersection, a pedestrian/bicycle underpass, new traffic signals, and improvements to two transit stations and a multi-use path. [More information.](#)

Establishing Innovative Partnerships

- The Cleveland Foundation's Greater University Circle Initiative (GUCCI) convenes quarterly meetings of the CEOs of multiple universities, hospitals, and other nonprofit organizations located in the University Circle district of Cleveland, Ohio. Working with the city, county, and regional transit agency, the organizations identified three major transportation infrastructure projects required to support the district's continued growth, provided funding for project planning and design, and helped secure state and federal grants for implementation. [More information.](#)
- The new Chicago Infrastructure Trust will pool \$7

billion from private investment firms to finance infrastructure projects in the city, starting with a \$200 million effort to reduce energy consumption in municipal buildings. A non-profit organization governed by a board of five members appointed by the mayor and approved by the city council will administer the Trust. Future projects may include schools, water and sewer, freight rail, public transit, ports and airports, roadways, and building retrofits. Depending on the project, loans from the Trust will be repaid with user fees, other project revenues, grants, or other public dollars. [More information.](#)

Additional Resources on Infrastructure Finance

- U.S. Department of Transportation Federal Highway Administration, *Project Finance Primer 2010*. (Note: this primer focuses on transportation, but provides a good overview of concepts that are also applicable to other types of infrastructure).
- Council of Development Finance Agencies (CDFA). (See the infrastructure finance resources in the "Online Resource Database." Note that some materials are behind a pay wall.)
- Center for Transit-Oriented Development, "Mixed-Income Transit-Oriented Development Action Guide"
- Center for Transit-Oriented Development, "CDFIs and Transit-Oriented Development."



States, it is a strategy that has been pursued in the European Union to strong results. The following strategic framework draws from those efforts as well as efforts currently emerging here in the United States.

Think and act regionally

Advancing sustainability strategies in slow growth regions requires bringing together a broad set of stakeholders across a larger geography than has traditionally been considered. Many of these places have seen a “hollowing out” of their urban cores that has often been accompanied by a shift in their economic centers away from the traditional core to a new economic center or sometimes

the development of multiple economic centers that might include the core as well as other more suburban locations. Because of this phenomenon, it is essential that any strategy start by defining its target area based on a geography that accurately reflects the service area of its regional economy. Doing so achieves two key goals:

- 1. It enables subsequent sustainability planning efforts to leverage and build off of areas of economic strength, and**
- 2. It helps address the effects of population de-concentration, establishing a larger regional population footprint, allowing the region to re-position itself as a larger economic market.**

While using one’s metropolitan statistical area (MSA)

is often the means to redefine one’s market economic “watershed”, some regions have used workforce commuting patterns as well as supply chain networks of key firms to determine their economic boundaries. Indeed our case study of [The Fund for our Economic Future](#) in Northeast Ohio has an economic service area that covers sixteen counties and four MSAs.

While the rationale behind working regionally is sound, putting it into practice can be challenging. Municipal boundaries and their related power structures make such efforts difficult as can long histories of intra-city competition as well as tense race relations. Regions that have been more effective at addressing these issues, such as [Joint Venture Silicon Valley](#), have often done so by engaging their business leaders as key champions for these efforts. These leaders are often “municipality neutral” and understand the detrimental costs of intra-municipal inefficiencies and racial isolation to their – and the region’s – economic bottom line and can be persuasive in arguing for regional collaboration.

Another powerful strategy is to carry out a regional community engagement strategy. Such an undertaking can appear daunting but grounding efforts in the voices of community residents ultimately provides the strongest mandate for regional actions. One example of this is the [Voices and Choices](#) undertaking that informed and grounded efforts in NE Ohio.

Know thyself – Who we are TODAY not yesterday...

Many slow growth regions are rich in history. They are home to prestigious universities, excellent cultural institutions, and the birthplace of America’s industrial heritage. While these attributes can be critical assets, in some cases holding onto what has been before can prevent these regions from being able to recognize and/or capitalize on new and emerging industries. In their most extreme, the desire to hold onto the past

“If we are one, we are one million.”

Community Leader on the market rationale for collaborating across jurisdictions in the Ruhr Valley, Germany



can make these communities appear unwelcoming to younger and/or new immigrant populations – two known critical demographic segments for spurring new economic wealth.

One way to address these issues is to ground regional sustainability strategies in quantitative analysis of the economy and existing housing, transportation, and land use patterns. Regions must bring together economic development, workforce development, community development, housing, transportation, and land use planners to develop a comprehensive “snapshot” of the region. This analysis should identify and spatially document key industries poised for growth as well as the location of their regional supply networks, commuting patterns, and workforce.

Using this information as a base, regions can then overlay information about their built environment to begin to inform strategies that will serve to increase connectivity between areas of emerging economic strength and residents. A complete analysis of major transportation networks, regional housing stock, and existing and future land uses and zoning ought to be part of this process. In addition to providing a spatial understanding of how jobs, housing, and transportation intersect in the region, this analysis might also examine:

- 1. Transportation:** Commuting times, including off-peak hours; “last mile” connections; transit affordability, and intermodal connectivity,
- 2. Housing:** Affordability issues, including rental vs. homeownership, market vs. subsidized affordability; analysis of housing quality, including those units reaching obsolescence; foreclosures; and some analysis of supply vs. demand to begin to understand if there is a mismatch in what products are available versus what the current regional “customer” is looking for.

The final overlay to this analysis should examine

and map regional demographic information to give key regional stakeholders a better understanding of how all residents are able to access jobs, housing, and transportation. At a minimum, this analysis should overlay demographic trends such as educational attainment, median income, and race, with transportation networks, housing options, and locations of growth industries.

The GIS mapping tool developed as part of **Cleveland+** is one example of this. The analysis of the regional economic drivers, the built environment, and the community should present a compelling visual narrative of the current connectivity of the region. Regional sustainability strategies in slow markets should focus efforts on increasing connectivity between jobs, housing, and transportation to better connect residents. Doing so not only makes more efficient uses of scarce resources but also serves to break down spatial isolation and increase density and community interactions – two proven ingredients for stimulating economic innovation.¹

Build on Regional Strengths

Once a region has an understanding of the current connectivity between regional economic centers and residents, this information can be used to make strategic choices about where and how to invest. This is perhaps one of the hardest steps for regional actors to take together because it demands making choices about investments to maximize impact and economic returns rather the more typical “peanut butter” approach where resources are distributed so that every community gets a little bit of everything. While the latter might appear on the surface to be more equitable, it often means that no one really has enough resources to move the market and create more economic opportunity for residents. This is especially

¹ Saxenian, Annalee. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, 1996, pp. 29 - 57.



true in slow growth regions where need quickly outpaces available resources and where there has been significant reallocation of populations over time.

One tool for helping to address this is the [Market Value Analysis \(MVA\)](#). Developed by The Reinvestment Fund, this tool has primarily been used in cities but its form and function could readily be applied to regions. In essence, through analysis of key indicators, it enables decision makers to advance targeted strategies for different communities based on their relative market strength. The goal is to “meet communities where they are” and target the right resources to help these places move their economies. So one community might need investments to develop a key catalytic project to jump start its economy, while another, perhaps a community with significant anchor institutions, like universities or hospitals, might need resources to help improve transit connectivity or preserve affordable housing around these anchors.

Embedded in the MVA is the approach that asks communities to identify and build off their regional market strengths – be that anchor institutions,

physical amenities, business centers, transportation hubs, or historical neighborhoods with desirable housing stock – and then work strategically to connect those assets to each other. Building off regional strengths also implies that not all communities can be everything to everyone; rather it is the uniqueness of each place and its connectivity to the rest of the region that fosters market strength. As Diagram 2 demonstrates, using data to inform targeted reinvestment strategies can have real results – here the City of Philadelphia used the MVA to develop focused reinvestment strategies and clearly saw shifts in markets over time.

Fix the basics

Unfortunately the best analysis of current assets and market strengths will not go far without a concerted effort to address the legacy of policies, practices, and business culture that can make it extremely difficult for new development, investments, and new ideas to take hold.

In some cases, the challenges are revisiting existing municipal policies that promote working in siloes

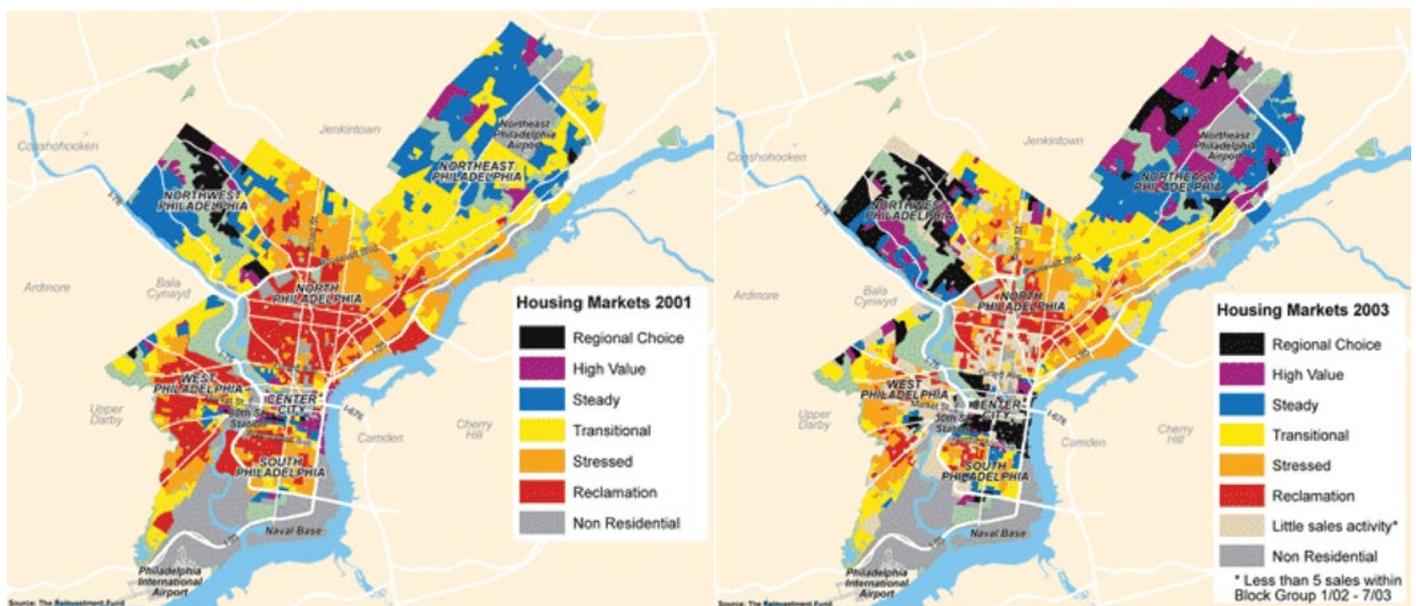


Figure 2. Change in Philadelphia Housing Markets 2001 -2003, Market Value Analysis

Source: The Reinvestment Fund, <http://www.trfund.com/planning/market-phila.html>



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rather than across a region. Conflicting incentives, zoning codes, and regulations make it difficult for investors and innovators to work seamlessly throughout a region. (In worse cases, archaic policies and systems make it impossible to work in even one municipality!)

Those regions that are competing successfully in the global economy have figured out that collaboration is the new competition – that is, the more they are able to work across municipalities, to put forth a more seamless economic, housing, and transportation framework, the more they are able to attract, grow, and retain firms, workers, and investments to compete on the global stage.

For slow growth regions, fixing the basics – promoting a regional housing strategy, streamlining key rules and regulations to attract investment, cooperating on regional transportation connectivity, collaborating on infrastructure investments, and coordinating key public service provisions – can not only attract investment, but can also help increase overall efficiencies and lower the cost of services. Efforts such as the [Regional Prosperity Initiative](#) and [EfficientGovNetwork](#) are just two examples of creative ways governments and communities are seeking to break down their municipal siloes to address common infrastructure and efficiency challenges.

You're only as strong as your weakest link

Finally, but most importantly, slow growth regions must acknowledge and address the challenges of economic isolation for many in their communities. These regions lead the nation in poverty rates, unemployment rates, racial segregation, and low educational attainment rates. While it is important for these communities to think about how they can attract and retain high-skilled residents, increasingly research has shown that failing to address economic

isolation but increasing the skills and access to opportunity for disadvantaged populations serves to retard overall economic growth.²

For this reason, while leaders will wish to connect areas of strength with areas of strength, the most sustainable efforts in the long-term will focus on how to connect those areas of economic isolation to areas of strength to address and eventually close regional opportunity gaps. Stakeholders should advance strategies to connect disadvantaged populations to jobs, education, affordable housing, and quality services not because it is the right thing to do, but because it has shown to be imperative for the economic competitiveness of regions. Efforts such as the [Regional Prosperity Project](#) are at the forefront of trying to advance regional growth with equity strategies to bridge these gaps.

Case Studies

The Fund for Our Economic Future

Launched in 2004, the Fund brings together foundations, business leaders, educators, and other key stakeholders to strengthen the economy and encourage inclusion and quality of life in Northeast Ohio. Their efforts encompass a 16-county region, which includes four MSA's along with the cities of Akron, Canton, Cleveland, Mansfield and Youngstown. At the beginning of the Fund's work, they invested in an extensive community engagement process, known as [Voices and Choices](#), which engaged over 20,000 people in the region to discuss challenges and priorities for improving the region's competitiveness. Results from this process have served to guide and inform subsequent actions of the Fund.

Working regionally and in partnership with [Advance](#)

2 PolicyLink and the University of Southern California's Program for Environmental and Regional Equity, [America's Tomorrow, Equity is the Superior Growth Model](#), 2011, p.11.



Northeast Ohio, the Fund has invested in a series of efforts to address its four priorities areas:

- **Business growth and attraction:** Efforts have included JumpStart, which provides venture capital and technical support to emerging growth industries with a focus on inner-city and minority-owned firms; MAGNET, the Manufacturing Advocacy & Growth Network, which supports and champions manufacturing in Ohio, and; BioEnterprise, which focuses on business formation, recruitment, and acceleration of health care companies and bioscience technologies.
- **Talent development:** Efforts are focused both on K-16 education and workforce development, including targeted sectoral strategies. Some initiatives include: Eastern Ohio P-16 which is advancing a coordinated education pipeline strategy in a four-county region and Worksource a one-stop shop to help regional manufacturers locate qualified workers.
- **Growth through racial and economic inclusion:** Highlighted efforts include The Commission on Economic Inclusion, which includes over 100 employers in the region working to increase the diversity of business leadership (including Board of Directors) and grow minority-owned businesses and the Minority Business Accelerator 2.5+ which focuses on growing minority-owned businesses by helping them more effectively connect to supply chain opportunities.
- **Government collaboration and efficiency:** As noted above, key efforts to increase government coordination and efficiency include the Regional Prosperity Initiative and EfficientGovNow. In addition there is the Sourcing Office, which is advancing group purchasing programs for local governments, school districts, not-for-profit, and for-profit entities.

The Fund publishes an annual [Dashboard](#) of indicators to monitor the region's progress on these goals. Most recently the Fund has been a driver to connect sustainability planning (housing, land use,

infrastructure, and transportation) with the region's larger economic development efforts.



The Ruhr Valley, Germany

The Ruhr Valley region includes four counties and several major cities including, Bochum, Dortmund, Duisburg, Essen, Gelsenkirchen and Oberhausen, and is home to about 5.3 million people. Once the heartland of Europe's coal and steel industries, over the past thirty years the region has faced massive economic restructuring and significant declines in industry and populations.

In the face of this abandonment and decay, in 1989 the State Government of North Rhine-Westphalia created a regional redevelopment plan, “International Building Exhibition (IBA) at Emscher Park”. The plan encouraged the ecological, economic, and urban revitalization of the Ruhr Valley and the Emscher River through several collaborative partnerships with various agencies and 17 local authorities of the Ruhr district.

The master plan focused on environmental regeneration as a prerequisite for economic development. It envisioned a regional landscape park, the [Emscher Landscape Park](#) that would act as a “green connector” between seventeen cities and towns in the Ruhr Valley, following the Emscher River and leverage the abandoned industrial areas along the river as sites for redevelopment and green space. These sites were targeted in order to improve the quality of



the undeveloped areas surrounding them and to save money by making use of the existing infrastructure. Over time, through targeted regional investments that reinforced a common theme, a new sense of region was created. The establishment of a 250-mile [Industrial Heritage Trail](#) that links the region's sites, towns, and economies has reinforced this sense of region.

Through this effort, each city has developed its unique assets in support of the larger, regional whole.

- **Essen**, has become a cultural center, redeveloping its former industrial sites, [Zeche Zollverein](#), into multi-faceted arts and culture district that includes museums, design centers, creative live/ work space, and performance spaces
- **Duisburg** focused on redeveloping its industrial port area as a thriving mixed-use community as well as developing their strength as a shipping logistics hub.
- **Bochum** has led the way in medicine and research. Bochum is also home to [MedEcon](#), a collaborative of universities, hospitals, and medical technology companies, working to advance and promote health industries in the region.

In addition to investing in these efforts, the region has focused on promoting tolerance and openness to attract talent to the area – resulting in a significant percentage of foreign-born residents today.

More than twenty years later, the Ruhr region has seen significant impacts. Improvements in environmental quality, establishment as a global creative center, and the development and retention of jobs are among some of these.

Additional Resources on Advancing Sustainability in a Slow Economy:

- The 110th American Assembly, [Reinventing America's](#)

[Legacy Cities: Strategies for Cities Losing Population.](#)

- Bradley, Jennifer and Katz, Bruce, [Mastering the Metro: How Metro Regions Can Win Friends and Influence Economies](#), Next American City, May 2012.
- The Brookings Institution Metropolitan Policy Program, [The State of Metropolitan America: on the Front Lines of Demographic Transformation](#), 2010.
- The Fund for Our Economic Future and Advancing Northeast Ohio, [A Regional Agenda to Advance Northeast Ohio](#), May 2001.
- Kunzmann, Klaus. [The Ruhr in Germany 10 Years after the IBA Emscher Park](#), 2010, http://www.sestosg.net/convegno_unesco/KUNZMANN_PDF.pdf
- Mallach, Alan, editor, [Rebuilding America's Legacy Cities: New Directions for the Industrial Heartland](#), The American Assembly, 2012.
- McGahey, Richard and Vey, Jennifer, editors, [Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas](#), Brookings Institution Press, 2008.
- PolicyLink and the University of Southern California's Program for Environmental and Regional Equity, [America's Tomorrow, Equity is the Superior Growth Model](#), 2011.
- [Regional Prosperity Project, Linking Growth and Opportunity: Findings from the Front](#), May 2012
- Vey, Jennifer. [Restoring Prosperity: The State Role in Revitalizing America's Older Industrial Cities](#), The Brookings Institution Metropolitan Policy Program, 2007.
- Vey, Jennifer, [Building From Strength: Creating Opportunity in Greater Baltimore's Next Economy](#), The Brookings Institution Metropolitan Policy .



Developing Corridor Plans for Implementation

Introduction

Transportation planning commonly occurs along corridors, and the corridor is the natural home of transit, including both buses and fixed-guideway lines like light rail, subways, streetcars, and BRT. However, land use planning and planning for smart growth and TOD is more often accomplished at the station area or city scale. Using the corridor to link transit planning with land use and TOD planning can be a game changer in terms of implementing successful transportation and land use implementation.

Why Do TOD Planning At The Corridor Scale?

Regions that have made and maintained this link over time have seen transit become an organizing principle for development, with local jurisdictions identifying the areas around transit stations as their own development nodes. Because transit and transportation investments can change market dynamics along a corridor by providing new access to neighborhoods and centers, the corridor is a useful place to begin thinking about the market potential of different nodes. Corridor planning can also be cost-effective for cities and regions, especially when multiple stations along a corridor face similar challenges and opportunities.

Corridor planning presents an enormous opportunity to engage stakeholders early in the process. The excitement surrounding a new transit investment can attract a diverse group of stakeholders, and decision-making about the best alignments is achieved when a broad group of stakeholders is involved early on. Corridor scale planning is easily married to phased implementation and investment plans, which identify when and where public dollars should be invested to support local TOD goals, whether the intent is

to facilitate market-driven projects or to direct the velocity and trajectory of neighborhood change.

With the continued demand for and build out of new transit projects, understanding the benefits that corridor planning for land use and TOD can provide is even more critical. In 2011, Reconnecting America identified 643 transit projects that were being planned, proposed, or were under construction in 106 regions in the US. While many of those projects may not ultimately be constructed, the sheer number of places demanding more transit options in their communities points to the potential for accompanying land use transformation. However, that potential comes with a need to understand how corridor planning can facilitate not only successful transportation outcomes but also successful land use and TOD.

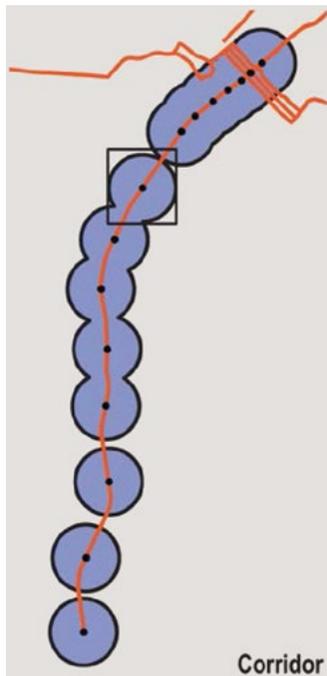
Further, corridor planning for land use and TOD can:

- Clarify the corridor type and its function within the regional network;
- Enhance an understanding about the roles of different station areas along the corridor, and how increased connectivity and transportation choices can benefit residents of all incomes;
- Enable planners to understand how development along the corridor should be phased, and the land uses and development intensity that is most appropriate at each station;
- Provide regions that are planning or extending transit corridors with a better sense of what to expect in terms of development;
- Prioritize high-potential stations for development and investment; and
- Broaden the perspective on both regional needs and local needs.



Defining a Corridor for Land Use and TOD Planning

Defining a corridor for land use and TOD implementation is a little different than defining one for transit or transportation. Instead of focusing on the street or railway, the corridor should be defined as a series of nodes. The image to the left shows the half-mile circles around stations along a light rail line. Together, these nodes make up the corridor that should be considered for planning and implementation purposes.



Any transit technology can serve as the basis for planning at the corridor scale – heavy or light rail, streetcar, trolley or bus. Different transit technologies will define different areas of influence. For example, the area of influence along light and heavy rail corridors is typically a half-mile radius around stations. Because streetcars can stop as often as every street corner they tend to have a stronger influence on development all along the line and a few blocks on either side. Planning for nodes along bus corridors might be a ¼ mile from bus stops, depending on the frequency and number of stops the route makes.

However, the overall TOD potential at nodes along a corridor depends more on the design and quality of service than it does on the transit technology. High-quality service for all transit technologies should be defined as high-frequency service along dedicated lanes or rights of way that serve to “fix” the line and provide certainty for developers and investors that

transit service will not be moved to another corridor. TOD potential is also determined by the walkability and bikeability of nodes, the presence of retail amenities, and the local and regional housing market.

Corridor Destinations Impact Land Use and TOD Potential

This brief discusses three corridor types that are useful for understanding the potential for land use and TOD at nodes along a corridor. Each corridor type is defined by what it connects and how these connections influence the overall potential for land use and TOD. Different corridor types create different land use and TOD opportunities. While this categorization of types serves to advance corridor analysis and planning, real transit corridors cannot be so easily categorized and tend to be a mix of types.

Destination Connectors:

Destination connectors link residential neighborhoods to multiple activity centers, including employment, medical and commercial centers and academic campuses. Because they make these connections, these transit corridors consistently result in high ridership, creating a “win” for transit agencies while building regional support for future transit investments. Destination connectors encourage ridership in both directions throughout the day because they serve 9-to-5 employment centers as well as other destinations.



Examples: The Health Line BRT in Cleveland is one example of a destination connector. The Rosslyn-Ballston Corridor connects a series of job centers in Arlington County, Virginia, to the urban core of Washington D.C. Phoenix’s light rail line connects the city’s downtown to Arizona State University, and Houston’s Red Line connects the downtown to the



Medical Center and Rice University.

Implications for Land Use and TOD:

- The demand for new development will likely be highest in station areas identified as “destinations,” especially if they are walkable, higher-intensity activity centers with good connections to surrounding neighborhoods.
- Higher-density development is more likely to occur along destination connector corridors due to increased market demand for locations with access to job and activity centers.¹
- Auto-oriented job centers or malls along the corridor may require new pedestrian-oriented street and building design before they become truly transit-accessible, even if they are very close to stations.
- Providing easy pedestrian and bicycle access to stations will encourage higher transit ridership, especially at employment centers where people are less inclined to walk long distances.²

Commuter Corridors: Unlike destination connector corridors, commuter corridors generally serve only one major activity center – typically the central business district – with riders traveling into the CBD in the morning and out of the CBD at the end of the day. This is in contrast to destination corridors that provide access to a variety of activity centers and result in ridership throughout the day. Heavy rail, light rail and high-quality bus service all operate commuter corridors. Transit service along commuter corridors is typically moderate to high-frequency during peak business hours, and tapers



off during off-peak business hours.

Examples: The North Star Line connects downtown Minneapolis to residential communities to the northwest. Metra in Chicago operates 12 commuter corridors connecting suburban neighborhoods to Chicago’s downtown. Other examples of commuter corridors include the Blue Line in Sacramento, Capital Metrorail in Austin, and the Blue Line in San Diego.

Implications for Land Use and TOD:

- New development along commuter corridors is likely to be residential with moderate to high densities, depending on market demand and proximity to the urban core.
- If transit service is only available during commute hours, most travel will be to or from work in the morning and evening, and it will be much more difficult to achieve the land use benefits associated with higher-frequency service, which tends to activate real estate markets.
- It’s important to enhance pedestrian and bicycle access to stations to achieve higher ridership, and to provide streetscape improvements such as new sidewalks and street trees.
- Transit feeder service and park-and-ride lots may be appropriate at commuter corridor stations in suburban neighborhoods since many riders will need to travel longer distances than they would in urban neighborhoods.

District Circulators: District circulators facilitate movement within an “activity node” – typically a downtown or a commercial, medical or educational center. Circulators extend the walkability of these districts, making it easier to access amenities without a car. Circulators also connect neighboring activity nodes, as in Portland, where the streetcar connects the downtown to the Pearl District to the north and to Portland State University and the Oregon Health

1 Center for Transit Oriented Development. “Rails to Real Estate: Development Patterns Along Three Recently Constructed Transit Lines,” 2011.

2 Cervero, Lund, Willson. “Travel Characteristics of TOD in California,” January 2004.



and Science University to the south. The Portland Streetcar maximized the TOD potential within the district because it connected these important destinations in neighborhoods with a significant amount of land available for development.

Examples: The free MallRide in Denver shuttles riders from one end of the 16th Street Mall to the other, and free bus service along the Nicollet Mall in Minneapolis connects the Convention Center to the Hiawatha light rail line. The South Lake Union Streetcar provides a way for people to get around downtown Seattle. The planned Oklahoma City streetcar will connect the state capitol with downtown and the Oklahoma State Medical Center.



estate market is active.

Strategies for the Corridor Scale Implementation

Below are five strategies to implementing land use and TOD plans that make sense at the corridor scale. They may be combined or used singly, depending on the stakeholders involved in the planning process and what outcomes they desire.

1. Understand Potential Market Reaction To Transit

The introduction of transit can influence the real estate market in two ways: 1) by improving access to key destinations along the line, which can activate markets around stations, and 2) by “nudging” the market from station areas with pent-up demand to station areas that have land available for development but do not have strong markets.

Identifying the key activity centers along a corridor is an important step of understanding the potential market reaction. New development is likely to occur in or around nodes that served as preexisting centers before new transit or land use investments were made.

If the market is strong around nodes where there is little land available for development, the pent-up demand at those stations may move to neighborhoods around the next node along the corridor – if local conditions encourage it. Adjacent stations that provide significant land opportunity and sites that are attractive because of their size or their price and/or are surrounded by walkable neighborhoods with local retail and other amenities are likely to attract the most development. Value capture strategies should be employed at stations where the market will be strongest.

Similarly, understanding how market pressures will shift and affect housing prices will help ensure that new transit connections don’t displace residents who

Implications for Land Use and TOD:

- Circulators promote biking, walking and “park once” strategies. Streetscape improvements such as wider sidewalks, street trees, benches and other amenities will encourage pedestrian activity within a district.
- District circulators can be a key component of a district-wide parking plan, making it possible to decrease parking ratios and boost retail sales without providing more parking.
- The frequency of service can determine whether a circulator corridor will enhance transit connectivity and become an organizing principle for development.
- Circulators can increase overall transit ridership in the region if they connect to the larger transportation network.
- District circulators are best able to attract market-rate development if they connect important destinations with land available for development, and if the real



live in neighborhoods along the line. For example, the Eastside Extension of the Gold Line in Los Angeles improved the connection between the lower-income neighborhood of Boyle Heights and hundreds of thousands of jobs in downtown Los Angeles, which is just across the Los Angeles River. Stakeholders are working to preserve existing affordable housing and build new affordable housing so that these residents, many of whom are renters, will be able to continue to afford living in Boyle Heights even if housing rents and prices increase.

Resources: Report: [Rails to Real Estate](#); Report: [Downtowns, Greenfields, and Places in Between](#)

2. Guide Growth and Development

Walkable nodes, especially those connected to the larger city or region by transit, offer an opportunity to “grow smarter,” as more people can live and work in these places without needing to use a car for every trip. When regional housing and employment growth occurs in well-connected nodes, this can help reduce traffic congestion, improve regional competitiveness, enhance equity (when people of all incomes and backgrounds can access more destinations in less time), and reduce carbon emissions.

In the Bay Area, the Metropolitan Transportation Commission (MTC) adopted a TOD Policy that requires local jurisdictions to zone the land around stations in such a way that the corridor can meet overall thresholds for housing density, before the agency will invest in the planned capital transit projects. By setting thresholds at the corridor, rather than station area scale, the Policy ensured that critical transit-supportive minimums were met while acknowledging that local jurisdictions are ultimately responsible for their local land use authority.

Washington D.C.’s Silver Line is another example of a corridor rethinking how transit connects to land use. The transit will link the District of Columbia

to Dulles Airport and link the edge cities of Reston, Herndon, Ashburn and Tysons Corner – a sprawling suburban office park – to the regional rail network. Tysons Corner alone will have four new Metrorail Stations, and together the local planners and developers realized this presented an enormous opportunity. The Comprehensive Plan envisions a walkable, dense, 24-hour urban center where the needs of pedestrians, bicyclists and transit users are given preference, in many circumstances, over the need to move people by automobile.

The City of Bellevue, located in the Puget Sound region with Seattle, created an innovative plan to concentrate development along a transit corridor while preserving farmland in the county. The City worked with King County to create a Transfer Development Rights (TDR) agreement that will allow developers in Bellevue’s Bel-Red employment area to purchase development rights from rural private properties in order to build additional square footage in their future commercial and residential projects. In addition to focusing growth near transit and in a well-planned, walkable community, this will permanently preserve from 3,000 to 6,000 acres of rural land in the county.

Resources: Case Study: [MTC TOD Policy](#), Case Study: [Tysons Comprehensive Plan](#), Case Study: [City of Bellevue TDR Agreement](#) (News release)

3. Develop A Mixed-Income TOD Strategy

Every corridor requires a slightly different approach in order to support equity, though there are two key tenets to consider: 1) Existing affordable housing should be preserved in neighborhoods that could face increased market demand, and resources for new affordable housing should be targeted to these neighborhoods. 2) All residents along a corridor should be able to access the benefits resulting from



a major transit investment – including reduced transportation costs, improved health due to better conditions for pedestrians and cyclists, increased private investment, and increased access to the regional job market.

A mixed-income or equitable land use or TOD strategy should include an analysis of existing conditions, including the median income of residents, educational attainment, percent of renter households, and age of housing stock. This analysis will make it possible to determine whether residents of all incomes will benefit from new or improved transit connections. Nodes that are undergoing change – whether there is disinvestment, a polarization of income levels, or housing prices are increasing – should be prioritized for intervention over more stable station areas. The existing conditions analysis should be followed up by the development of policies that will preserve existing affordable housing and provide subsidies for new affordable units, support existing local businesses, and improve access to transit through better street design and streetscape improvements.

The Central Corridor light rail in the Twin Cities, Minnesota will connect several lower-income neighborhoods, including the historic African-American Rondo neighborhood in St. Paul, to employment centers in downtown Minneapolis, the University of Minnesota and downtown Saint Paul. Residents, community groups and the philanthropic community have expressed concerns about the need for affordable housing along the corridor, and this conversation coalesced in the Big Picture Project. The project was a collaborative effort that created a corridor level vision and set of tangible goals that all stakeholders, including cities, residents, business, and community groups could get behind. The coordinated plan identifies a numeric goal that nearly doubles the baseline projection for new and preserved affordable housing units; a feat that will only occur if new

resources (public and private) and ways of doing business are identified.

Resources: Case Study: [The Big Picture Project](#); The online Mixed-Income Transit-Oriented Development National Action Guide (www.mitod.org) provides a step-by-step process that allows users to craft a mixed-income TOD strategy customized for specific neighborhoods along a corridor.

4. Identify common challenges and opportunities

Because corridors function as a collection of nodes, they often face similar barriers when it comes to implementing land use and TOD plans. Corridor planning can create efficiencies when these barriers are identified at the same time and a common set of solutions can be provided.

Valley Metro Rail in Phoenix sponsored the development of a model transit-oriented district overlay zoning ordinance and pedestrian-oriented development guidelines to encourage TOD around the 26 rail stations on the Central Phoenix/East Valley light rail corridor. The corridor traverses three cities – Phoenix, Tempe and Mesa – which were all able to customize the ordinance for their cities, and adopted it into their zoning codes.

A corridor-level analysis for existing BART and Caltrain lines in San Mateo County outside San Francisco found that the fragmentation of development parcels was a barrier to TOD at many stations, and tools were developed to address this problem. If TOD plans had been developed one station at a time each city would have had to come up with their own solution to what was a shared problem, resulting in a more costly process to achieve the same results.

A corridor scale implementation plan for the Orange Line BRT in Los Angeles identified connectivity



improvements that could be made at each of 14 stations on the corridor in order to facilitate safer conditions for pedestrians, bicyclists, and bus riders. The corridor plan provides information that could support combining these improvements into one infrastructure grant application, rather than a slower and potentially more costly, station-by-station approach.

Resources: [Orange Line Bus Rapid Transit Sustainable Corridor Implementation Plan](#); [Valley Metro Model Transit-Oriented District Overlay Zoning Ordinance](#); [San Mateo County Transit-Oriented Development Opportunity Study](#)

5. Establish a Phased Implementation and Investment Plan

Because corridors include many nodes with many needs, implementation can be a daunting task, especially when public resources are limited. Prioritizing nodes or station areas for different kinds of investment can help ensure that resources are not spread too thin to have impact. Identifying where and when to invest public dollars will help ensure that local land use and TOD goals are met, whether the intent is to facilitate market-driven projects or to direct the velocity and trajectory of neighborhood change.

A phasing strategy can also be a helpful tool in prioritizing resources. Based on an assessment of the relative land use and TOD potential and goals at each node, a phasing strategy can ensure that resources are spent on the right activities at the right time.

For example, along the US 36 corridor in the Denver/Boulder region, a corridor analysis was used to determine which stations had the most TOD potential in the short-term and which had potential in the long-term, and which were best suited to become park-and-ride facilities.

In Portland, OR and Pittsburgh, PA, TOD Typologies have been used to identify the kind of investment that different station areas currently need in order to support TOD. Portland Metro has a long-standing and successful TOD program that makes strategic investments in TOD projects. In Metro's typology, stations are sorted based on the market for new development and existing urban form into three categories: "plan and partner," "infill and enhance," and "catalyze and connect." At "plan and partner" stations Metro will provide technical assistance and partner with local jurisdictions and developers, and at "infill and enhance" stations Metro will take an active role in funding TOD projects.

Resources: [Northwest rail Corridor and US 36 BRT \(See Appendix C: US 36 Economic Findings and Recommendations\)](#); [Portland Metro's TOD Strategic Plan](#)

6. Invigorate Stakeholder Engagement And Collaboration / Coordinate Key Stakeholders

The best approach for coordinating stakeholder input will depend on the objectives for the corridor, the corridor type, and the regional conditions. For example, corridors meant to guide growth and development should engage for-profit developers to enhance the understanding about where development is most likely to occur and what kinds of public interventions may be required in particular nodes. In corridors that run through older, lower-income neighborhoods, partnerships with community groups and residents will be important to addressing potential gentrification by creating plans to prevent the displacement of residents. District circulators enhance the connections between major institutions in downtowns or other activity centers, and engaging business owners, property owners and major employers will help create momentum for transit investment and robust TOD implementation. New



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types of partnerships are emerging: Public agencies, community development professionals, affordable housing planners, private business interests, and foundations are all working together to plan for land use and TOD.

Along the West Corridor, in the Denver region, the City & County of Denver, the City of Lakewood, the Denver Housing Authority, MetroWest Housing Solutions (Lakewood), and the U.S. General Services Administration (GSA) formed a partnership work cooperatively to implement TOD plans along the light rail corridor. This collaboration began in 2009, three years before the light rail line was scheduled to open. Both the City of Denver and Lakewood had already completed station area plans, and together with the housing agencies, these partners made up some of the largest single landowners along the corridor. The partnership came together to complete a Strategic Planning Process in 2011 that established a station area typology and development priorities, strongly positioned the West Corridor for funding opportunities, and marketed the corridor and send a unified and consistent message to the development community. Since then, the working group has formed a 501c(3) and renamed themselves the West Line Corridor Collaborative.

Resources: [West Line Corridor website and report](#); [Central Corridor Funder's Collaborative](#); [Healthy Corridor for All: A Community Health Impact Assessment](#)



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Creating and Implementing Sustainable Development Performance Indicators and Benchmarks

Introduction

This issue brief provides an overview of best practices for creating and implementing performance indicators and benchmarks to improve sustainable development outcomes. Sustainable Communities Partnership grantees may identify a need for a set of community-specific indicators to augment the set of “Flagship Sustainability Indicators” created by the Office of Sustainable Housing and Communities (OSHC). This document is designed to complement OSHC’s guidance.

Performance indicators are metrics specially designed to evaluate a system, behavior, phenomenon or activity. They provide information on the relevant dimensions of an issue and are usually used to track progress compared to a benchmark, and/or toward a pre-set goal. In this document, the terms “performance indicator” or “performance measure” will be used interchangeably and denote a metric used to gauge an issue. The term “benchmark” identifies a reference point or baseline against which performance is measured; for example, it could be your own current or past performance, peers’ performance, or best practices. The terms “goal” or “target” are used interchangeably and refer to a specific desired outcome, the achievement of which is monitored via performance indicators.

“An indicator is something that helps you understand where you are, which way you are going and how far you are from where you want to be. A good indicator alerts you to a problem before it gets too bad and helps you recognize what needs to be done to fix the problem.”

Maureen Hart, Sustainable Measures

The rest of this Issue Brief discusses the purpose of performance indicators, the selection and design process, characteristics of high quality indicators, suggestions for communicating and using indicators (including the use of benchmarks), and two case studies.

The Purpose of Performance Indicators

Performance indicators are a key planning tool that allows us to systematically monitor and evaluate relevant aspects of an issue or system. They go beyond simple data collecting and reporting in that they imply a value judgment about priorities and the desirable direction of change.

Compared to traditional performance indicators, which measure economic, environmental, and social issues separately, sustainability indicators focus on the links and interconnections between these aspects. They should reflect all dimensions that are deemed important in the community’s vision of sustainability. They can reflect different levels of analysis and address causes as well as effects.

Performance indicators can be used for multiple purposes depending on the stage of the project.

In the early stages:

- Analyzing the current state of a phenomenon and revealing ensuing problems
- Aiding in the identification of possible solutions to problems
- Facilitating the creation of benchmarks and calibrating achievable targets



As the project evolves:

- Tracking progress towards achieving goals
- Identifying trends and anticipating problems
- Assessing effectiveness of an action, comparing performance over time and across organizations

Throughout the project:

- Communicating information and educating the community about the need for a particular policy or project by publicizing its goals, evolution, and impact
- Revealing linkages and connections between different parts of a community
- Inspiring community members to act in achieving certain goals.

“Indicators’ main influence is not primarily after they are developed and published, but rather during the course of their development. The process of debating the design of indicators shapes the players’ thinking about the policies. Agreement on indicators helps get agreement on policy. The production and discussion of indicators in an agency or in the public arena focuses organizational and political attention on the issues they represent, and gives them legitimacy. Their use can change the terms of public discourse over the long term.”

J. Innes and D. Booher, 2000

Selection and Design Process

The process of design and selection of performance indicators is as important as the measures per se: it involves multiple players who must come to a consensus about priorities, goals and strategies. For this reason, it is a collaborative learning process that helps frame the issue, identify the most relevant aspects, and gain legitimacy in the public arena. This section provides guidance on the basic steps of the process based on a review of recent literature (see Resources section).

While the initial selection and design phase can prove to be quite long, spanning from a few months to multiple years for large scale projects (see Resource #2), this time investment is strategic in the long run: selecting good indicators through a consensus increases their potential for acceptance, endorsement and influence in the future.

The basic process, as shown in Figure 1, typically begins with the creation of a working group. The group should involve multiple players: decision-makers, anticipated users of the indicators, sustainability experts, representatives of the

community, and other interested stakeholders. To learn which issues are most important to community members, especially those typically underrepresented in planning processes, consider administering opinion-based surveys or other strategies that have proven helpful in past and current community participatory work. A shared and participatory process can ensure that all concerns are addressed; it provides more credibility, legitimacy, and ability to influence action. Furthermore, diverse backgrounds and expertise can improve comprehension of complex problems and provide access to richer data. Another benefit of this process is that it brings together entities and individuals who are not typically connected: while it may take time to build up new relationships and build trust, the positive effects of breaking up silos and joining forces can be huge.

Once a working group is established, its first task is to identify what the indicators initiative is trying to achieve: define its scope and geographic scale (community, region, corridor, etc.), time horizon, and overall goals. There should be agreement on the definition of sustainability and the aspects that are most relevant for the community. Articulating the intended purpose(s) of the performance indicators—



assessing the extent of a problem, measuring progress, educating the public, guiding long-term change—ultimately guides what is measured and how; some indicators are better suited to one purpose or another.

It is a good idea, at this point, to research existing models, methodologies, and common approaches, both within and outside the immediate community. This can be useful in building on past experience, avoiding duplication of effort, and designing a conceptual framework that effectively connects issues, goals, strategies and indicators. A useful model is the pressure/state/response (PSR) framework (see Resource #6), which highlights the relationship between different types of indicators: pressure indicators measure the activity underlying the issue

(e.g. vehicle miles driven), state indicators measure the existing condition (e.g. air quality), and response indicators measure the actions taken to change the state (e.g. number of bike lanes).

Another common model is one that makes direct links between goals, objectives, and performance measures, as is depicted in Figure 2. The table in Figure 2 represents some of the objectives of a Texas Department of Transportation (TxDOT) created around the goal to improve the sustainability of their local transportation system. (Note that a comprehensive set of objectives and indicators for sustainable development likely reaches far beyond transportation-related issues, e.g. improving education, promoting neighborhood safety, and

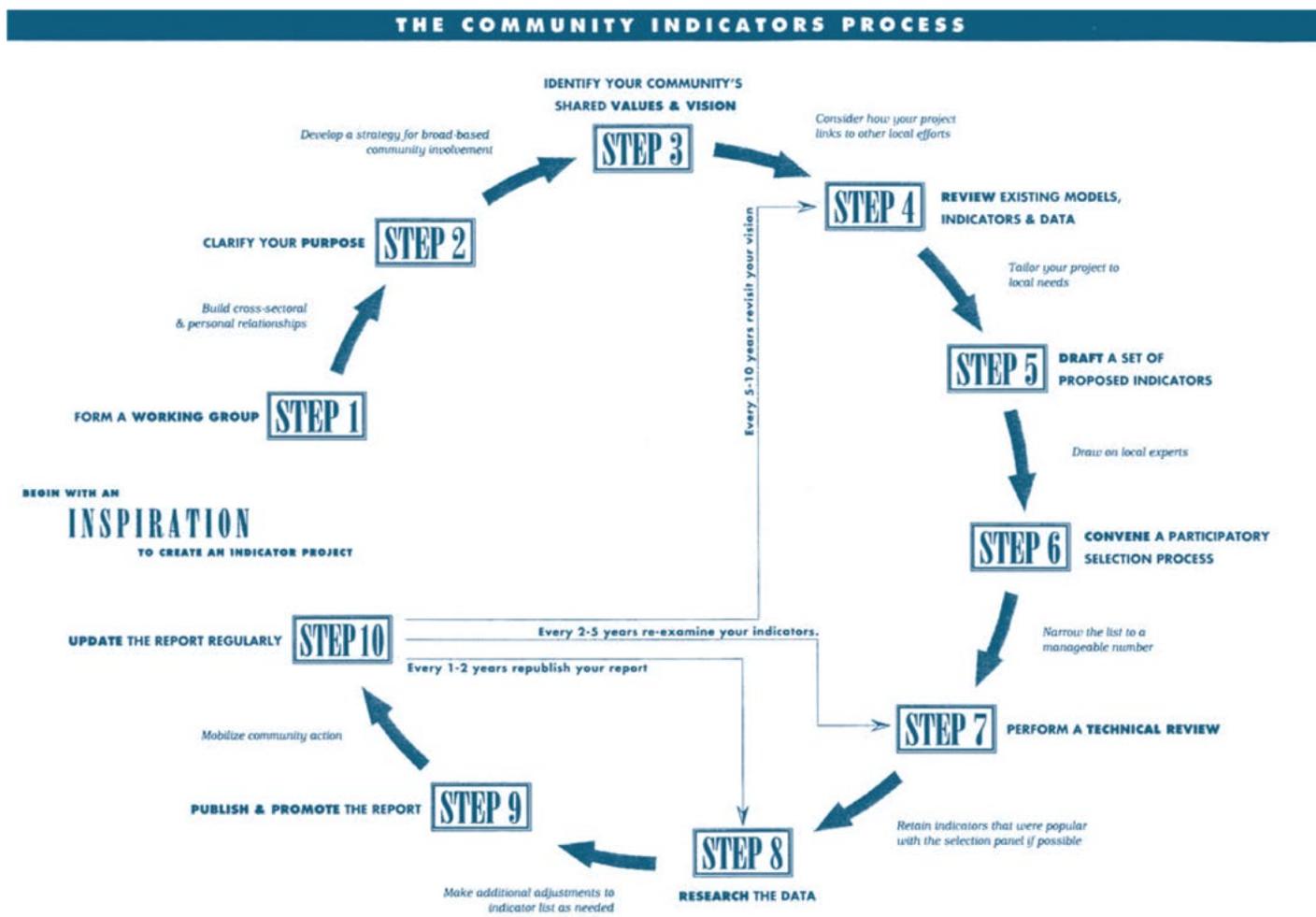


Figure 1: Sustainability Indicators Selection and Design Process (SOURCE: Rhonda Phillips, 2003, pg. 25.) (See Resource #3)



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building inclusive communities.)

Once the structure is defined, specific indicators must be identified that directly and comprehensively address the targeted issues. Often there are multiple ways to measure a phenomenon, and the choice of the most appropriate ones should result from a collaborative refining process. Again it is useful to scan for measures and metrics suggested by the literature or that are used in other communities. This step is crucial to save time and money, and also may inspire the identification of data and metrics that were not previously under consideration. At the same time, it is important to avoid mere replication and always adapt the indicators to the specific local context. By definition, sustainability involves multiple dimensions; it is therefore good to have a range of indicators to express the complexity of the situation and multiple levels of analysis. However, it is also important to avoid an excessive number of metrics, which could generate confusion. If the indicators

will be used by different departments within a large organization, 50 to 100 might make sense, while a smaller number (10-30) may be more appropriate for general consumption. Resources available for effective management of the indicators should also guide these decisions, as it is better to have few well-defined, regularly updated indicators that are regularly updated rather than a vast array of metrics that are too hard or costly to track.

The next step is to verify what data are available or could be collected, for past, present and future performance. Data availability directly impacts the choice of indicators: a great measure is useless if there is no data about it. One option is to use traditional indicators: they are easy to retrieve and reliable, and have the advantage of allowing comparison across communities. However, traditional data might tend to focus the attention on traditional solutions, so it may be worth the effort to do some independent research. This can be facilitated through diverse stakeholder

Capital Region Sustainable Communities Initiative (Madison, WI)

The CRSC is a partnership of 35 government, business and non-profit entities in the Madison region, funded through a 2010 Sustainable Communities Regional Planning grant. CRSC's project includes the development of regional performance measures to track progress toward long-term sustainability outcomes.

This effort is led by Dr. James LaGro, of the University of Wisconsin-Madison's Department of Urban and Regional Planning. Dr. LaGro kindly shared some insights from the first 18 months

of their work:

“Developing relationships and networks that didn't exist before has had a real positive impact... people come at these issues from different disciplinary perspectives, so there's been a lot of collaborative learning, not just trust building. We're now working to achieve more synergy across our different working groups; in hindsight, we might have tried to do this a little earlier in the process. One thing that is going to be very useful, I think, is that we're using a theory of change

approach to think through, in detail, how we're going to achieve system-level “bellwether” goals. In other words, to map out how we will get from point A to point B and beyond. Simply tracking indicators doesn't necessarily do that. Rather than trying to measure everything under the sun, we are instead focusing – at least initially—on a few bold and inspirational goals. And to reach these goals, many steps are necessary, which implicitly means there will be multiple interventions and indicators along the way.”



Objective	Possible Performance Measures
Increase accessibility	Number of travel objectives that can be reached within an acceptable travel time, ability of non-drivers to reach employment centers and services, land- use mix, percent employees within x miles of major services, highway system supply, transit supply, and time devoted to non-recreational travel.
Increase economic benefit	Jobs added, value added to goods produced, wages added to job payrolls, tax revenues, net present worth, and change in gross domestic product.
Increase equity	Point-to-point travel cost, point-to-point travel time, population within walking distance to transit, percentage of disadvantaged travelers with alternatives, affordability of public transit, percentage of income devoted to transportation, percentage of day devoted to commuting, and percentage of residents participating in land-use and transportation decision-making.
Increase livability	Average vehicle speed, mode split, per capita land area paved for roads and parking, and number of major services within walking distance of residents.
Increase mobility	Travel time index, total delay, delay per person, person throughput, volume/capacity ratio, travel time, travel rate, link capacity, link usage, and vehicle miles of travel.
Increase safety	Accident rate, accident fatality rate, freeway incident rates, total value of damages as a result of accidents, traffic violations, average response time for emergency services, tons of hazardous materials spilled due to accidents, percent of vehicles exceeding speed limit, percent of motorists driving under influence, and percent of motorists using seat belts.
Reduce air pollution	Concentration of hydrocarbons (HC), oxides of nitrogen (NOx), and carbon monoxide (CO) emissions, percentage of population exposed to threshold levels, tons of HC, NOx, and CO vehicular emissions, and emission rates.
Reduce congestion	Travel rate, delay rate, total delay, average speed, mobility index, hours of congestion, level of service (LOS), volume/capacity ratio, duration of heavy congestion, vehicles per lane mile, and percentage of corridor congested.

Figure 2: An example of a detailed examination of possible ways to measure a baseline and progress over time given a set of transportation-oriented objectives. Source: Texas Transportation Institute, “Developing Sustainable Transportation Performance Measures for TxDOT’s Strategic Plan,” April 2009.

involvement and collaboration with local universities and research institutions. If the project has a longer-range perspective, the collection of new tailored data could be very beneficial and reveal undetected problems and/or solutions. In many cases, however, a wealth of information already exists within different departments, institutions and organizations: the focus should therefore be on unlocking existing data, letting information flow across sectors, and exploiting unexplored data connections. Whatever dataset is chosen, be sure to assess its quality and verify the correlation between that particular measure and the general concept that it should represent.

The next task is analysis of information. Past and current data can be used to establish a benchmark (or baseline) to characterize current status, as well as to calibrate a reasonable and meaningful target. Identifying a goal is not strictly necessary, but it helps drive and motivate policy action and it gives reference points for monitoring progress toward sustainability. Targets should be challenging but realistic and achievable within a given time horizon. Even if a precise quantitative target cannot be set, it might still be possible to specify ranges or thresholds, or at least the desired direction of change.

It is important to define the time horizon and



the frequency of monitoring. Clear roles and responsibilities must be assigned to identify what parties are involved in collecting, analyzing, and publishing the data. The timeline of the project should also include periodic assessments and reviews of both concepts and methods, so that indicators can be adapted to feedback, new information, and changing conditions.

The final piece of the process concerns communication: indicators only have an impact if they are known and understood by the intended users, who in turn act upon the information they convey. Therefore it is important to explain their meaning, publish regular reports, and highlight results among relevant stakeholders and decision-makers. The entities in charge of monitoring data should be held accountable for regular reporting on performance indicators, even if the indicators do not show the desired outcome.

Overall, it is important to realize that developing good performance indicators is a long-term project, requiring a far-sighted timeline. Even if the initial design phase is relatively short, indicators need to be persistent to gain influence (five to ten years, according to one estimate). Indicators become more legitimate over time as their design and interpretation are debated in public arenas, their meaning is clarified, and more data becomes available. Within the relatively short timeline of a Sustainable Communities Partnership grant, many indicators may not show measurable changes, however it is still possible to lay the foundations for a performance evaluation system that can be sustained over time.

Characteristics of Good Performance Indicators

There are no readymade lists of indicators that can fit all contexts, because performance measures must be tailored to the special needs and characteristics of each community. There are however some guidelines to follow in order to identify effective metrics. Indicators should be:

- **Comprehensive.** Compared to traditional indicators, which measure single aspects of a community separately, sustainability indicators should be holistic, or focused on linkages and connections between economic, environmental, and social issues. The set of indicators should cover all relevant dimensions of the community's vision of sustainability.
- **Meaningful.** Indicators should fit the local context and be related to issues that matter for the community; their significance should be easily understandable by community members and they should have the potential to be incorporated in decision-making.
- **Controllable.** Indicators should measure phenomena or behaviors that are or can be directly influenced by community actions and decisions.
- **Timely.** A good indicator should be sensitive enough to change as conditions vary, so that it can serve as an early warning and allow timely interventions and corrections.

Good indicator checklist:

- Comprehensive
- Meaningful
- Controllable
- Timely
- Accurate
- Comparable
- Based on good data

Remember that it's a learning process!



- **Accurate.** Indicators should measure what really matters. Direct measures should be preferred whenever possible; if they are not available, it is often possible to find proxies, i.e. indicators that are connected with and reflective of the real issue of interest. Indicators can be qualitative, so long as it is possible to establish standards and benchmarks to gauge the outcome.
- **Comparable.** Performance indicators should allow comparisons over time and with similar communities or agencies. Whenever possible, indicators should be normalized, in other words expressed not in absolute terms but in relation to standard reference units (such as per-year, per-capita, per-mile, per dollar) to facilitate comparison.
- **Based on good data.** Good indicators are based on data that are accessible, reliable, verifiable, consistent over time, and cost-effective to collect. They should reflect the geographic scale of the initiative, and ideally they should allow further decomposition (breakdowns by gender, age, location, etc.) to better characterize the issue. Indicators should be transparent in methodology and easy to understand by people who are not experts.

Developing good indicators is a learning process: it is important to be prepared to toss an indicator that turns out to be irrelevant, not manageable or too hard to track, and to introduce revisions and improvements in methodology. At the same time, changes should be made thoughtfully in order to preserve continuity of data and allow the construction of relevant time-series. If a change is indeed introduced, it is essential to disclose the reasons behind the change and how it affects comparisons with previous data.

Communicating and Using Indicators

The ultimate purpose of indicators is to inform action and foster change toward sustainability. Therefore, they are only meaningful if understood by the intended audience, discussed in the public arena, and

integrated into the decision-making process. Technical information alone, of course, does not drive policy response or behavior change. To be effective, indicators must be linked conceptually and practically to actual initiatives or potential actions. There must be established mechanisms to incorporate indicators and the information they convey into the decision-making and planning process of the community or agency.

Another crucial aspect is effective communication, which cannot be considered an addendum to the project; rather, the need for communication should

“You need data geeks and you need storytellers. And those are usually two very different skill sets.”

Holly St.Clair, MAPC

guide indicator development from the outset and appropriate communication channels and tools should be designed in parallel. A periodic report is a common tool. It should provide an overview of the framework and vision, an assessment on how indicators are evolving, and what it means for the sustainability of the community. Formal reports should be complemented by additional resources, particularly a dedicated website, to provide more detailed information, frequent updates, and/or interactive features. If there are specific targets, it is important to show the progress towards them (or lack thereof) in a clear and intuitive way. There should be a means to stimulate discussion and collect feedback from users, and also a venue that encourages and accepts the participation of community members in initiatives related to the issues tracked by the indicators.

One thing to keep in mind is that having good indicators and data is not enough to convey a message. Numbers must be brought to life. Reports cannot just be a collection of graphs and tables; they must communicate the big picture and convey the



vision in an engaging way. Information should be presented in a way that resonates with the audience, and the level of detail should also be appropriate. If directed to the general public, the focus should be on the main issues and information should be conveyed in a simple and visually appealing way (e.g. with infographics, maps, pictures). Conversely, if a particular audience has a high level of expertise the content can be more advanced and technical. In any case, information about the methodology and data sources should always be provided.

Cautionary Notes and Challenges

When designing performance indicators for sustainability, there are a few mistakes to avoid. The first risk is to choose measures with a narrow scope that fail to reflect the true meaning of sustainability for the local community. For example, it might be tempting to favor indicators that are easily quantifiable over those that are difficult to measure. Similarly, some indicators may not properly reflect the overall target or the progress toward it; for example, intermediate objectives may be favored over final

Special cautions:

- Choose indicators that match scale, scope, local context
- Pay extra attention to proxies, indexes, and qualitative indicators
- Be smart about data collection: exploit existing data and conventional channels, create partnerships, institutionalize data maintenance and reporting

outcomes. Other mismatches between goals and measures can occur with partial indicators that do not represent the overall impact of a phenomenon, and indicators based on inappropriate reference units that

convey a biased representation of reality. Designing a conceptual framework in the initial phase can help maintain a logical structure and make sure that all aspects are addressed properly.

Secondly, some types of indicators require particular caution:

- **Proxy indicators.** Proxies are always imperfect measures and their interpretation requires some assumptions, therefore it is a good idea to research the literature to make sure there is convincing evidence of the link between the proxy and the underlying issue.
- **Indexes.** An index is an aggregate measure that combines multiple indicators into a single metric, thus providing a synthetic overview of an issue. This can be useful for comparison purposes and often appeals to policymakers and journalists, though indexes themselves may not resonate as strongly with the general population. Because the construction of indexes requires discretionary choices in the method of aggregation, a good index will follow sound principles and best practices, have a transparent methodology, and provide access to disaggregated data. Indexes also do not inherently lend themselves to collaborative learning, and therefore should be used in conjunction with other measures to help distinguish the underlying causes of movements in the index.
- **Qualitative indicators.** Sustainability involves concepts that are often hard to quantify (e.g. well-being), therefore identifying metrics and tracking changes can be a challenge. To overcome this obstacle, it might be useful to use tools like surveys, questionnaires, and focus groups to collect qualitative data, which can then be turned into numbers and statistics to establish targets and compare performance. In these cases, it is important to consult with statisticians about technical aspects of the process (e.g. representative sample, extrapolating data, etc.) to ensure the scientific validity of the results.

Other major challenges include data availability and



long-term maintenance. To deal with the ever-present challenge of data availability, it may be worth the effort to design new ways to collect information. Accountants, statisticians and other data partners can help find new ways to use existing information or incorporate the collection of new data into conventional systems that are already in place (e.g. censuses, public administration records, corporate reports, etc.). Another challenge is maintaining a regular and consistent flow of data to construct significant time-series, which requires careful planning and long-term commitment.

Case Studies

City of Santa Monica

Santa Monica's first Sustainable City Program was adopted by its Council in 1994 following a proposal by the City's [Task Force on the Environment](#).

The mission of the project was "to conserve and enhance local resources, safeguard human health and the environment, maintain a healthy and diverse economy, and improve the livability and quality of life for all community members in Santa Monica". The plan included numerical indicators and specific targets to achieve by the year 2000, organized under four areas: resource conservation; transportation; pollution prevention and public health protection; and community and economic development.

In 2001 the City created a working group to update and expand the plan, including a large group of community stakeholders: elected and appointed officials, City staff, neighborhood organizations, schools, the business community, and other community groups. The group met multiple times over the course of 15 months, proposing changes to the original goals and indicators and developing new targets for the year 2010. Early drafts were revised based on a large amount of public input received in 2002. The wide participatory nature of the process

resulted in stronger buy-in from City departments and community leaders, which gave more legitimacy and effectiveness to the project.

The product of this civic process was a new [Sustainable City Plan](#) organized around eight goal areas representing the community's vision of Santa Monica as a sustainable city. Each goal has specific indicators to track progress: some are "system level" indicators and measure the state or condition of an issue (e.g. percentage of total miles of city streets with bike lanes); others are "program level" indicators and monitor the effectiveness of initiatives and policies adopted by the community (e.g. percentage of organic produce served at City facilities). Many indicators relate to more than one goal area. A goal-indicator matrix is used to highlight the connections among targets and measures. One of the biggest strengths of the plan is that most indicators have either a quantitative target (e.g. 25% of citywide electricity usage from renewable sources) or a desired trend direction (e.g. upward trend in number of women or minorities in leadership positions). Having a defined objective has been very effective in driving policy responses and transforming the vision into concrete actions.

Progress toward the plan's goals is tracked on a [dedicated website](#) that provides simple yet comprehensive information to the public in a visually appealing way. For each indicator, users can access the latest data and read about its performance, interpretation, data sources, and methodology. While not all indicators can be updated regularly due to data limitations, the overall progress in each goal area is tracked in a [scorecard](#), with an annual score for actual achievements and also an "effort" grade. A brief narrative accompanies the scorecard describing the status of each issue, what initiatives are in place, and the challenges the city faces.

Following 18 years of effort, Santa Monica's many



targets have been met or exceeded, and the city has become a model for sustainability. However, the journey continues: Santa Monica is currently updating its Sustainable City Plan once again to reflect new environmental, social and economic needs, and to develop goals for the next decade. A ninth goal area focused on Arts and Culture has been added to their mix and will be included with the release of their updated plan during the winter of 2013.

Boston's Metropolitan Area Planning Council

Boston's Metropolitan Area Planning Council (MAPC) and its consortium partners are using Sustainable Communities Partnership funds in part to expand long-standing efforts to define, track, and improve sustainability performance indicators.

Seven years ago the process began by working with a group of experts and stakeholders to create a regional growth plan and link it to sustainable development and equity. The planning process lasted multiple years and culminated into “MetroFuture”, a comprehensive sustainable regional growth strategy for the Metro Boston area. The plan directly includes 65 goals in different areas of sustainability, which are in turn linked to more specific, and largely numeric, objectives. A broad mix of agencies and organizations were consulted to identify a large range of indicators used to track the progress toward meeting each objective. The final list included 217 indicators that are updated on varying schedules based on the level of collection difficulty or analytical complexity.

To collect data for the indicators, MAPC mostly focused on collecting existing information across different entities: “democratizing data” is an important aspect of the MetroFuture strategy, aimed at unlocking and disseminating administrative datasets and other resources. Another key to the strong foundation of this indicators work was incorporating

data collection into normal operations and working with local educational institutions, businesses and data partners to reduce the burden of data collection. One outcome of these collaborations with the Boston Indicators Project at the Boston Foundation is the [MetroBoston DataCommon](#), an interactive data portal and mapping tool with information about the region's people, neighborhoods, infrastructure, and environmental resources.

To balance the desire for regional indicators with the need to reflect the diversity of region's communities, MAPC developed a three-tiered method of tracking and communicating indicators: overall, the indicators and goals portray a region-wide picture, but the data is interpreted and characterized in terms of four different “community types” that reflect the variety of cities and towns that comprise its service area. The final tier involves tracking and communicating indicators at the municipality level to allow an even smaller scale level of data accessibility and interpretation.

MAPC recently published “[The State of Equity in Metro Boston](#)”, the first in a series of cross cutting reports to monitor the region's goals set out by the MetroFuture plan. The report begins by defining the vision for an equitable region as a place where “all people have full and equal access to opportunities that enable them to attain their full potential.” This conceptual definition is then applied to various issue areas: economy, education, environment, housing, public health, public safety, and transportation. The report includes a subset of the MetroFuture indicators that most clearly convey equity realities and challenges. Overall, they present a snapshot of the current state of the region and establish a baseline against which future progress will be measured. A related web tool allows users to explore the data from different perspectives and make various comparisons, for example among different demographic groups or



across municipalities or census tracts. All indicators are also supported by maps and data visualizations that make the content more user-friendly for site visitors.

Additional Resources

1. Office of Sustainable Housing and Communities: “Guidance on Performance Measurement and Flagship Sustainability Indicator Fact Sheets” Version 1.1. Provides guidance on collecting and documenting the Flagship Sustainability Indicators selected by OSHC for implementation by 2011 grantees (and optionally by 2010 grantees).
2. Innes, Judith E. and Booher, David E. (2001), “Indicators for Sustainable Communities: A Strategy Building on Complexity Theory and Distributed Intelligence”, *Planning Theory and Practice*, 1:2, pg. 173-186. Reviews the research and practice of indicator development and use, and offers several key lessons. A “must read” for those trying to enhance the effectiveness of indicators.
3. Rhonda Phillips, “Community Indicators”, American Planning Association, Planning Advisory Service Report Number 517, 2003. Reviews the evolution of community indicators and examines their implications for planning practice. Provides a good description of the process to identify indicators and useful case studies.
4. **Sustainable Measures**. Offers good background information including characteristics of effective indicators, a checklist for evaluating indicators, how to organize indicators, and information on data resources.
5. World Resources Institute, “Environmental Indicators: A Systematic Approach to Measuring and Reporting on Environmental Policy Performance in the Context of Sustainable Development”, May 1995. Offers basic history and background on environmental indicators, guidance on how to organize indicators, and case studies on influencing action.
6. Organization for Economic Cooperation and Development, “OECD core set of indicators for environmental performance reviews”, *Environment Monographs* n. 83, 1993. Presents the findings of the OECD Group that developed the Pressure/State/Response model.
7. **Sustainable Communities Online – Inventories and Indicators**. Pools information on sustainability, contains a large inventory of community resources showing how different communities across the U.S. are working to measure progress.
8. **Community Indicators Consortium**. Coordinates communities and governments in their effort to develop and use community indicators and performance measurement, contains an extensive database of indicator projects.
9. U.S. Census Bureau, **Longitudinal Employer-Household Dynamics, OnTheMap Application**. Data source for employment-related indicators; multiple layers of data can be viewed for a variety of geographies.
10. **HUD USER**. Office of Policy Development and Research. U.S. Department of Housing and Urban Development, n.d. Web. 15 Aug. 2012. A significant data source for indicators on housing, building technology, economic development, urban planning, and other housing-related topics.
11. The Reinvestment Fund, “The Policy Map.” Aggregates data from a variety of public sources including Census, HUD, USDA, USPS, FBI, IRS, HHS, and HMDA, and some third party data providers; includes a free online GIS application. Over 10,000 indicators related to demographics, real estate, crime, health, schools, housing affordability, employment, energy, and public investments.
12. Federal Highway Administration, “Methods for Gauging Livability Improvements”, **Livability Performance Measure Database**. A user-friendly searchable database of performance indicators and metrics.



Preserving Affordable Housing Near Transit

Introduction

Making the benefits of active, livable communities available to residents at all ages and income levels is a significant policy challenge. There is a long-term shortage of affordable housing in many cities, and existing affordable housing near transit may be lost as federal subsidies expire. Investing in affordable housing near transit is important, not only because it is one way to create more healthy, livable communities, but also because it supports other national policy goals related to environmental and economic sustainability. Furthermore, it takes time to develop housing, establish public transit, and attract the services necessary to create livable communities. To be ready for the needs of a rapidly expanding older population, planners and policymakers must work now to ensure that both existing and emerging transit-oriented communities benefit people of all ages.

Regions across the United States are expanding public transportation systems to allow more residential choices, improve access to employment centers, reduce traffic congestion and lower levels of greenhouse gas emissions. These transit investments will increase property values in many areas, creating community development opportunities and challenges. By taking action to create or preserve diverse housing options near transit, community leaders and developers can ensure that people of all incomes can enjoy the benefit of these investments.

This issue brief will attempt to help its readers, primarily the regional and local governments attempting to address the need for affordable housing options near transit, to better understand why the issue is important, highlight research already done by experts in this field, and provide examples of tools and

resources utilized in various regions throughout the country.

Framing the Issue

According to the National Housing Trust (NHT), this country builds approximately 100,000 affordable apartments each year, but for every new affordable apartment created, two are lost due to deterioration, abandonment or conversion to more expensive housing. Preserving existing affordable housing, particularly those units in proximity to public transportation, is more critical now than ever before. More and more of the affordability restrictions placed on properties throughout the country are expiring, and improving rental market conditions, particularly in high-demand areas such as urban and transit-oriented locations, are creating more and more incentive for owners of these properties to “opt out” of affordability programs, displacing existing low-income tenants, often forcing them to move further away from employment, schools, services, and other critical quality of life elements.

As this country, and our cities in particular, continue to grow in population, it is critical to get out in front of these challenges and establish policies, programs, and resources to preserve the existing stock of affordable housing, and affordable housing near transit in particular. Otherwise, we risk further isolating our most vulnerable populations and spending far more resources providing necessary infrastructure, services, and amenities to a much larger geography.

Preserving existing affordable housing is far more cost effective than building new affordable housing units. Land use restrictions and increasing land values make creating new affordable units extremely difficult, if not impossible. According to the NHT, rehabilitating



an existing affordable unit can be anywhere from one third to one half less than producing an equivalent new unit. In an era when traditional resources for building and preserving affordable housing are dwindling, it is ever more crucial to look to preservation first.

For many reasons, preservation is not only cost-effective, but far more environmentally sustainable, saving energy in a number of ways. Obviously, extending the lives of existing buildings will utilize far less material and create far less waste than constructing a new one. Further, preservation allows communities to maximize the use of its existing infrastructure (roadways, sidewalks, utilities, etc.) rather than build new ones. The environmental benefits are compounded when considering preservation of housing in proximity to transit, as low-income residents are far more likely than their wealthier peers to utilize public transit and forego individual automobiles. Further, commuting long distances in automobiles requires far more energy than heating and cooling of homes.

Preserving existing affordable housing is one of the most cost-effective and environmentally friendly strategies to uphold the Partnership for Sustainable Communities' six livability principles, the same principles you committed to addressing in applying for and receiving your grant.

Supportive Organizations

There are a number of national organizations who dedicate significant resources to ensuring that communities like yours are aware of the importance of affordable housing preservation. Any of them would be more than willing to assist you in establishing preservation tools and resources in your own communities. Here is a list of some of the most active organizations in affordable housing preservation, all of whom have worked together at various times to

provide research and policy assistance:

- [AARP](#)
- [Enterprise Community Partners](#)
- [National Housing Conference / Center for Housing Policy](#)
- [National Housing Trust](#)
- [Reconnecting America](#)

Taking Inventory of Existing Housing Options

A critical first step in establishing a system to preserve existing housing stock is to create a database of existing affordable housing stock. The Center for Housing Policy, with assistance from the John D. and Catherine T. MacArthur Foundation, wrote a policy brief on this very topic (see "Additional Resources" for a link) that provides a framework for establishing such a database as well as examples of regions in various stages of building one.

CHP recommends the database include, at a minimum, the following property-specific information:

1. Project name
2. Project address
3. Housing type (family, senior, homeless, etc.)
4. Affordability level (% of AMI, other metrics)
5. Number units/affordable units
6. Duration of affordability (i.e. date when deed-restrictions expire), if applicable
7. Funding sources
8. Physical condition of property

As the CHP brief explains, this information can be very difficult to compile and depends a great deal on the sophistication and capacity of the various local, state, and federal bodies who house that information. In addition to building a database of deed-restricted



affordable properties, it is equally important (and even more difficult) to include in the database information about un-restricted properties where rents are still affordable to low-income households.

Having this information on hand and maintaining it will serve a number of critical purposes. First, it will allow you to prioritize efforts and resources on those properties/neighborhoods most at risk. How you prioritize is entirely up to you and should be based on what you know of the local market. Generally, regions should prioritize those properties with expired or soon-to-expire affordability restrictions (primarily HUD and Low Income Housing Tax Credit resources) in improving locations or areas of opportunity (including transit-efficient locations). You can use this information to develop a “pipeline” of preservation opportunities, which will increase the likelihood that you receive the funding/financing necessary to implement your preservation strategy.

Second, this information will help you determine which existing resources might be utilized or re-purposed to address your markets needs. CHP points to an example in which the Florida Housing Finance Corporation chose to reserve a portion of its competitive Low-Income Housing Tax Credits (LIHTCs) for preservation deals. Other resources that most localities/regions/states already have include various HUD programs – Neighborhood Stabilization Program funds, HOME funds, Community Development Block Grant funds, etc. The database may also highlight a need to establish new tools or resources such as a land bank, acquisition fund, or a ‘bundle’ of incentives for owners of affordable property to maintain affordability.

Additionally, your database, particularly when presented in map, chart, graph, or other visual format, can serve as a powerful case-making tool when informing elected officials, municipal staff, agency leaders, and other critical stakeholders. While this

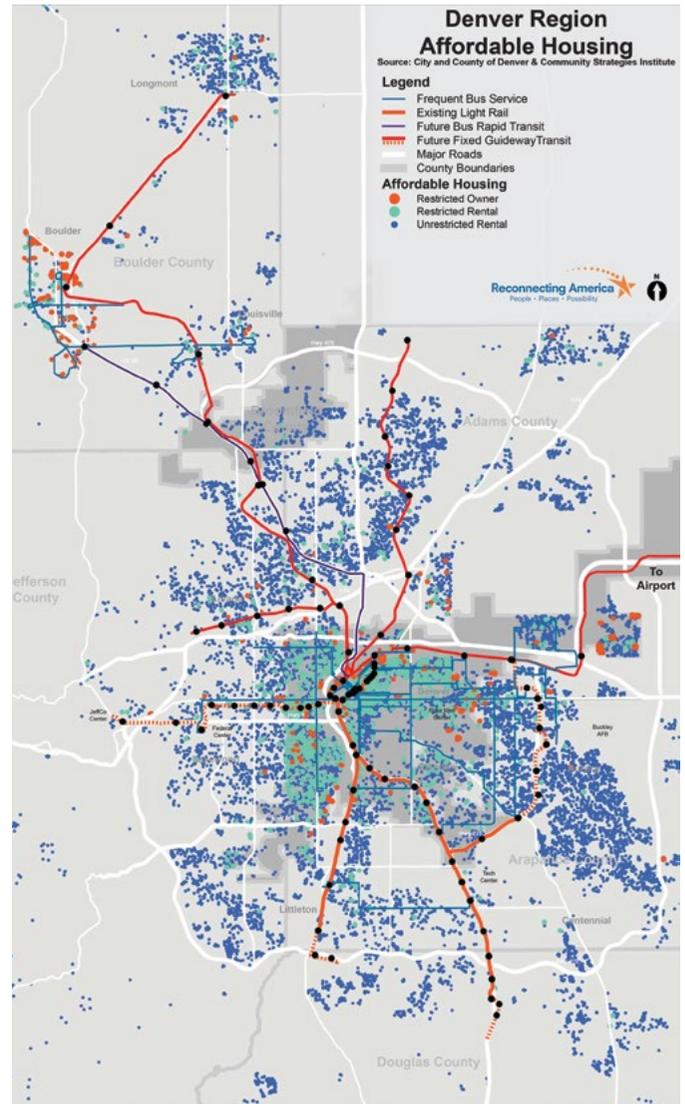


Figure 1: Mile High Connects, a broad partnership of non-profits and funders dedicated to improving access to opportunity and a higher quality of live through public transportation in Denver, produced its “Equity Atlas,” which includes maps of many critical issues throughout the Denver region, including a database of existing affordable housing, both subsidized and unsubsidized:

issue is complex, it can be broken down into powerful statements that may move decision-makers to action.

Tools & Resources for Communities

There are many examples throughout the country of state and local programs designed to preserve



affordable housing. The National Housing Trust maintains a state-by-state list of affordable housing preservation resources (see “Additional Resources” for link). Below are some suggested strategies for prioritizing preservation:

Low Income Housing Tax Credit (LIHTC) – Every state receives an annual allocation of federal tax-credits to incentivize the development of deed-restricted affordable rental housing. Since the program’s inception in 1986, it has produced over 90% of the country’s affordable rental housing stock, and it remains the primary resource for affordable development. Each state has the freedom to determine how to allocate its tax credits and is required to produce a “Qualified Allocation Plan” detailing its priorities and allocation methods. Consider encouraging your state’s housing finance agency to prioritize (or even better, reserve a percentage of credits for) preservation deals and/or transit-oriented developments.

Housing Trust Funds – Many cities, counties, and states have established housing trust funds for the development and preservation of affordable housing. Research your local and state resources to determine if your community has such a resource. If so, consider working with both the staff and the elected officials responsible for the funds oversight to prioritize and/or reserve resources for preserving existing affordable housing stock. If your community does not currently have a dedicated source of funding for affordable housing, encourage your elected officials to establish one. Ideally, they should be funded through a dedicated revenue source such as transfer taxes, impact fees, recording fees, etc., but they can also be funded through annual allocation of state or local tax dollars. In the latter case, it is even more critical to have strong case-making documentation like a robust inventory.

“Early Warning” Systems – Many local and state governments require owners of properties

with expiring affordability restrictions to provide advance notice (typically one year) of such expiration to existing tenants, local/state governments, and/or a network of mission-driven developer/owners. This warning provides these stakeholders with sufficient time to prepare. In the case of local/state governments, the warning provides them time to determine whether or not preservation of a particular property is a priority and if so, which resource might be available to incentivize the sale of such a property to a mission-driven owner or a commitment by the existing owner to maintain the property’s affordability.

These represent just a small sample of available tools and resources. Team Implementation encourages each of you to think creatively about which tools/incentives will provide the greatest impact and efficiency of delivery in your own communities.

Best Practices

As you continue to plan and implement your own strategies for affordable housing preservation, know that many of your peer cities, counties, regions, and states are doing great work in this field and have established some best practices. Do not start from scratch! Build on the efforts of others:

The **City of Seattle Office of Housing** recently published its Housing Preservation Guide, a comprehensive tool developed to help owners, managers, and sponsors of affordable rental housing ensure that their housing and its affordability lasts well into the future.

The **Shimberg Center for Housing Studies** at the University of Florida maintains the Florida Housing Data Clearinghouse to illustrate information, trends, and patterns as they relate to housing. One of the Center’s particular focuses is on affordable housing preservation. Its Lost Properties Inventory details every unit of affordable housing that has been “lost”



due to the owner opting out of expiring affordability restrictions or failing due to substandard maintenance and management. The inventory provides a lot of insight into the characteristics and leading indicators that signal potentially “at-risk” properties.

The **Massachusetts Department of Housing & Community Development** includes in its annual Qualified Allocation Plan for Low Income Housing Tax Credits and Prioritization Matrix for Preservation Projects that is utilized to determine the level of risk that an existing affordable housing project exhibits in terms of losing its long-term affordability. The document is very simple and easy to understand, yet highly impactful in the implementation of the State’s preservation efforts. (Scroll to last two pages.)

The **Ohio Preservation Compact** is a partnership between the Ohio Housing Finance Agency, the Coalition on Homelessness and Housing in Ohio and the Ohio Capital Finance Corporation. The group has set a goal of preserving at least 14,000 units over the next ten year with a combination of financial, data, technical assistance, and policy efforts.

Conclusion

On behalf of Team Implementation, congratulations to all the regions who have been awarded OSHC grant funding and thank you for your interest in preserving affordable housing near transit. This is a critical issue that requires immediate and ongoing action by leaders like you. These issues exist in practically every corner of the country, so do not feel as though the challenges you face in this regard are unique. Team Implementation urges you to remember that there is a large support network of high-capacity organizations willing to offer expertise, advice, and technical assistance throughout this process. All you need to do is ask!

Additional Resources

- [Affordable Housing Preservation FAQs.](#)
- [Preserving Affordability and Access in Livable Communities.](#)
- [Preserving Affordable Housing Near Transit.](#)
- [State by State Summaries of Preservation Policies and Programs and 2011 State by State Summary](#)
- [Affordable Housing Preservation Initiatives](#)
- [Taking Stock: The Role of “Preservation Inventories” in Preserving Affordable Rental Housing.](#)
- [Mixed-Income Transit-Oriented Development Action Guide.](#)



Sustainable Economic Development Strategies

Introduction

Healthy, equitable regions should provide a variety of economic opportunities, ideally accessible to workers of all skill levels. However, in many regions throughout the country, the fastest growing employment centers are predominantly located in auto-oriented suburban communities, often at the edge of metropolitan regions. The location of new jobs at the fringe has important workforce implications, as residents face longer commutes getting to work from their homes, especially for low-income populations. These long commutes can result in a significant cost to households and individuals as they spend more time and money traveling to work. Furthermore, job decentralization has other negative implications, including an increase in land consumption, traffic congestion, and greenhouse gas emissions. Reversing these trends requires the integration of economic development, transportation planning, workforce training, and land use planning at the local and regional levels. In order to promote more sustainable development patterns, planners

and policymakers can begin by reinforcing existing job centers and focusing future job growth in central locations, often in mixed-use, “walkable” districts with transit. In this issue brief, we further explore the economic challenges facing many regions, as well as the types of strategies that can help to foster innovation, boost productivity for businesses, reduce transportation costs, and provide better linkages to workers, ultimately resulting in more sustainable economic development.

The Challenges

Slow job growth and persistent unemployment

The impact of the 2007-2009 recession is still being felt by many families throughout the country. From 2000 to 2010, total employment in the United States declined by 3 million jobs.¹ In October 2012, the national unemployment rate improved slightly at 7.5 percent, signaling some signs of recovery. However, in many metropolitan areas, the growth has been even slower, and multiple regions face unemployment

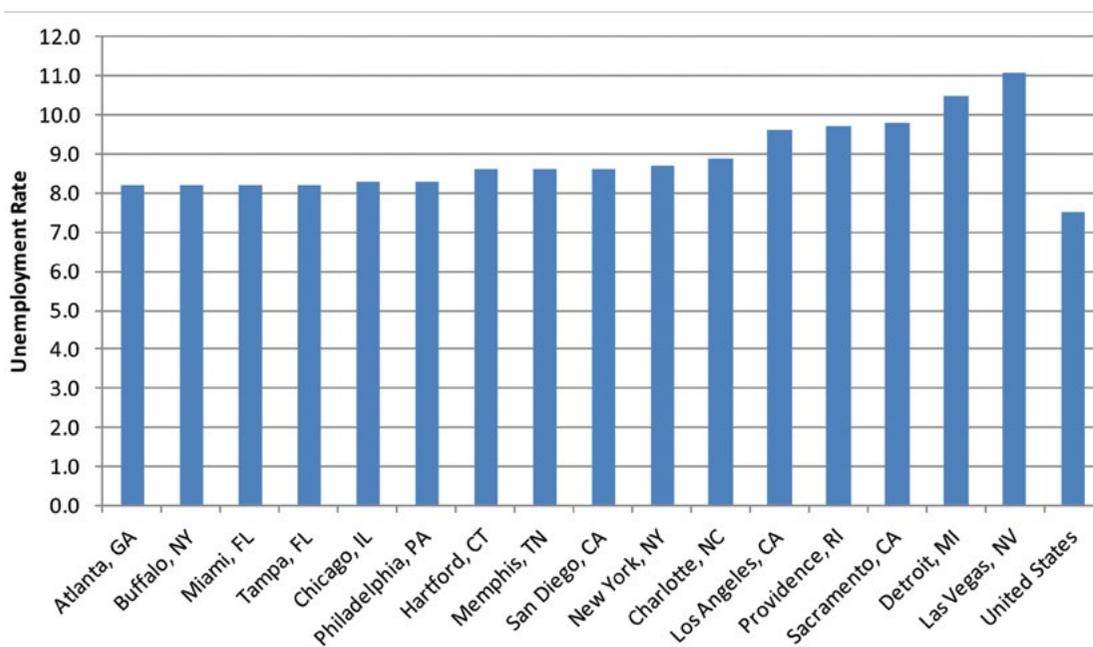


Figure 1: Monthly unemployment rate for selected metropolitan areas, October 2012. Note: Includes Census Metropolitan Statistical Areas with a population of more than one million. Preliminary estimates for month of October 2012. Not seasonally adjusted.

Source: Bureau of Labor Statistics Local Area Unemployment Statistics.



DISCLAIMER: The information presented on this page are those of the author and do not reflect the views or policies of the U.S. Department of Housing and Urban Development or the U.S. Government. Inclusion of these reports on the HUD USER web site does not mean an endorsement of these institutions or their viewpoints.

rates higher than 8 percent (see Figure 1). Some regions like Las Vegas, Sacramento, and Miami, were strong growing regions prior to the recession, but were heavily impacted by the housing downturn and foreclosure crisis.² Others, like Providence, Hartford, and Detroit, have been experiencing decades of slow or declining economic growth, partly due to shifts in the global economy.³

Fundamental economic shifts

Over the last half century, the United States economy has undergone profound changes, transforming from a more manufacturing-based economy to a more service-based one. Whereas the manufacturing sector used to employ about a third of the labor force in 1950, today it employs less than 10 percent of workers.⁴ This does not diminish the importance of the manufacturing sector to the national economy. In fact, although it now employs a smaller share of the labor force than before, manufacturing output has been consistently growing. However, in terms of jobs, sectors like professional and business services, health care, and educational services have grown much faster, and it is expected that these trends will continue into

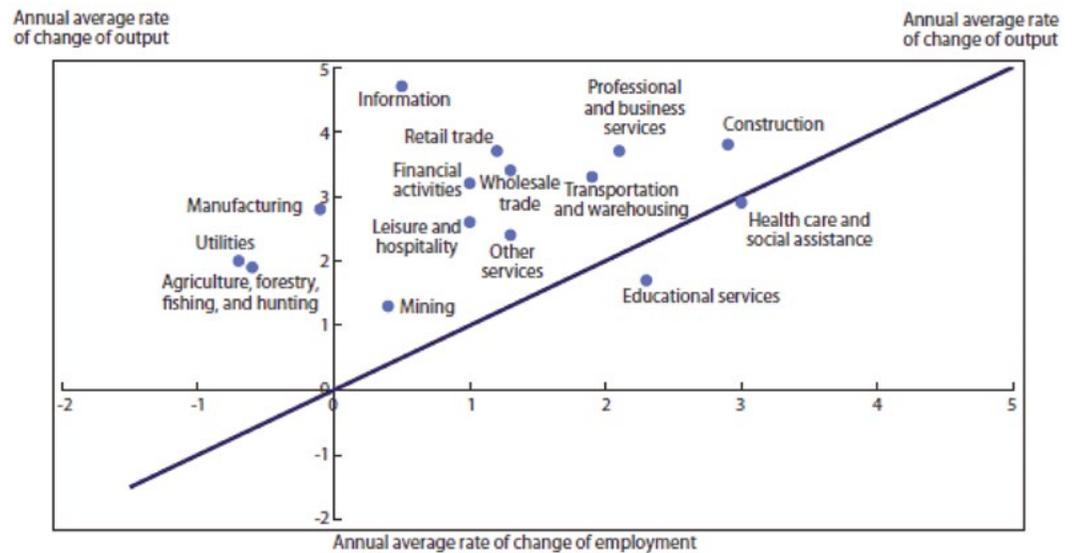


Figure 2: Projected annual percent change: employment versus output by industry sector, 2010-2020

Source: U.S. Bureau of Labor Statistics

the future. The Bureau of Labor Statistics projects that service-providing industries will account for 88 percent of total job growth from now to 2020, especially in the health care, professional and business services, and educational services sectors (see Figure 2 below). Growth in the goods-producing sectors will primarily be driven by construction, as this sector recovers from the real estate downturn. The shifts in the nation’s economy described have implications for the types of jobs that will be available to workers, and the type of training that will be needed.

Transformations in the workforce

The industry shifts described above signal a need to train workers to fill positions in the growing service-based sectors. But there will also be a need to prepare workers to take jobs in other occupations, many of which do not necessarily require higher education. The Bureau of Labor Statistics estimates that many of the job openings in the next ten years will arise from replacements of existing workers in nearly all occupations as the Baby Boomers exit the labor force. But in many regions, there is a wide gap between the educational attainment of the young people entering the workforce and the Baby Boom generation that

2 “Foreclosure rates for top metro areas in Q3.” USA Today. October 28, 2009. Accessed December 3, 2012.
 3 The Brookings Metropolitan Policy Program, State of Metropolitan America, 2010
 4 Ronald Kutscher, “Historical Trends, 1950-92, and current uncertainties” Bureau of Labor Statistics Monthly Labor Review. November 1993. Accessed December 3, 2012



is retiring. Graduation rates have been falling since the 1970s; the high school completion rate has declined from 77 percent in 1969 to an estimated 69 percent in 2007.⁵ In addition, there are significant disparities between different demographic segments. National graduation rates are much lower for the nation's Black and Hispanic students than for Asian and White students.⁶ These trends are particularly troubling because the average high school dropout earns 60 percent less than a high school graduate.⁷ Furthermore, those that are unable to complete high school are much less likely to have the qualifications to take on jobs that require higher technical skill levels than before. The need for higher skilled labor cuts across almost all occupations. Many employers across the country report that industries like retail and construction now require that employees have strong computer skills.

Decentralized growth patterns

Although CBDs and downtowns remain important regional employment locations, American cities have experienced significant decentralization over the last 60 years, as job centers have shifted from urban downtowns to suburban communities.⁸ Many low-income workers do not own cars and lack good transit options to get to suburban job centers. Even for low- and middle-income workers that own cars, the commute to work can be a financial burden. This condition is likely to worsen in many regions as gas prices rise, absorbing an increasing share of a family's income that could otherwise be spent on other

5 Christopher B. Swanson. "U.S. Graduation Rate Continues Decline." Education Week. June 2, 2010. Accessed December 4, 2012.

6 Ibid.

7 "The High Cost of High School Dropouts: What the National Pays for Inadequate High Schools." Issue Brief. Alliance for Excellent Education. October 2007. Accessed December 4, 2012.

8 Dena Belzer, Sujata Srivastava, Jeff Wood, and Ellen Greenberg. "Transit-Oriented Development and Employment." The Center for Transit-Oriented Development. May 2011.

household costs.

Limited public resources

The 2007-2009 recession had a severe impact on state and local budgets, as tax revenues declined and the costs of providing services continued to climb. The Center on Budget and Policy Priorities estimates that 31 states had a combined budget deficit of \$55 billion in the fiscal year beginning July 1, 2012.⁹ In this environment, many states are cutting back on programs that support local economic development, as well as slashing funds for K-12 schools, community colleges, and universities. For example, the state of California recently dissolved all of its redevelopment agencies to partly close the budget gap¹⁰, leaving many cities struggling to find alternative funding sources for economic development and revitalization.

Key Strategies

Build from your strengths

In order to develop a viable economic development strategy, it is important to begin with a solid understanding of the driving forces in your regional economy. Many regions are focused on attracting new and emerging industries, but often these sectors do not relate to a region's existing strengths, the skill levels of its workforce, and the broader goals for economic development. Rigorous analysis of employment trends by industry and occupation, coupled with an assessment of the types of investments needed to attract and retain jobs, can help to ensure that the regional strategy is tailored to local conditions. The East Bay Economic Development Alliance (EBEDA) in partnership with the Workforce Development Board of Contra Costa County, the

9 Phil Oliff, Chris Mai, and Vincent Palacios. "States Continue to Feel Recession's Impact." Center for Budget and Policy Priorities. June 27, 2012. Accessed December 4, 2012.

10 "Redevelopment Agency Dissolution." California Department of Finance. Nd.



Alameda County Workforce Investment Board, the Oakland Workforce Investment Board, and the East Bay Community Foundation, recently completed a comprehensive report titled “Building on our Assets” that identified the primary industries that have historically driven growth and were anticipated to continue to thrive. Based on these findings, EBEDA and its partners developed a holistic economic development strategy that included recommendations on education and workforce strategies, as well as land use policies, regulatory reform, and transportation/ infrastructure investments to support growth.

Focus job growth in nodes to foster innovation and improve access for workers.

Research shows that there are potential economic benefits to agglomeration, or geographic clustering of economic activity.¹¹ A 2006 study demonstrated a positive relationship between job density and innovation, finding that dense cities produced more patents per capita.¹² There is also evidence to suggest that the Gen X and Millennial workforce, given their interest in flexible work environments and technology use, may prefer non-traditional workplaces.¹³ Some technology companies, recognizing the changing preferences of their younger workers, have redesigned the workplace to encourage collaboration and information-sharing.¹⁴ National job forecasts indicate that the most rapidly growing sectors will be in sectors that are more likely to cluster in urban centers, such as professional and business services, hospitals, and

universities. By directing job growth in existing job centers and downtowns, regions can help to support innovation by allowing companies to locate in close proximity to each other. In addition, focusing jobs in denser districts that provide a variety of amenities can also help firms to recruit and retain talented employees. Creating and reinforcing job centers within the core of regions, especially when connected to transit, is also an important strategy for improving access to jobs for lower income workers.

Partner with educational institutions and workforce boards

A sustainable economic development strategy should be aligned with broader regional workforce and education initiatives to maximize the potential for job creation. Community colleges and workforce boards can be powerful partners for economic development by helping to prepare a highly qualified workforce that can attract firms to the region. For example, the North Carolina community colleges have been a key factor in the state’s thriving biotechnology sector, preparing new workers entering the labor force and “re-training” workers that formerly worked in declining industries like textile mills and tobacco.¹⁵ The North Carolina Biotechnology Center, one of the state’s economic development agencies, partnered with local employers and community colleges to develop a curriculum adopted by the community colleges that gets students ready for entry-level jobs in the biotech field.¹⁶

Channel financial resources towards existing job centers.

The New York Times estimates that governments spend nearly \$80 billion each year in economic development incentives to private companies, ranging

11 Alfred Marshall. Principles of Economics. London, UK: MacMillan and Co., 1920; Romer, Paul. “Increasing Returns and Long-run Growth.” Journal of Political Economy, 103. 1986

12 Carlino, Chatterjee, and Hunt. “Urban Density and the Rate of Invention.” Federal Reserve Bank of Philadelphia. Working Paper NO. 06-14. August 2006. Accessed November 30, 2012

13 Pew Research Center “Millennials: A Portrait of Generation Next.” February 2010

14 Laura Crescimano, Mark Shorett, Egon Terplan and Toni Vi. “The Urban Future of Work.” SPUR Report. January 2012

15 Joan Fitzgerald. 2006. “Biotechnology,” pp 114-149 in Moving Up in the New Economy: Career Ladders for US Workers. Ithaca, NY: Cornell University Press.

16 Ibid.



from tax credits to grants.¹⁷ But for nearly all of the states, the economic development incentives are “place-neutral.” In other words, they do not necessarily target these investments in specific locations like existing job centers or locations near transit. In fact, in many cases, the incentives facilitate the decentralization of jobs, as has been documented by Good Jobs First, by assisting companies to relocate away from the urban core into suburban locations that are often inaccessible by transit.¹⁸ An alternative approach would be to award assistance to firms that locate in existing downtowns and employment centers. One such model exists in Illinois with the Business Location Efficiency Incentive Act, which considers location near mass transit and affordable workforce housing as a factor in awarding economic development awards.¹⁹

Case Studies

New Orleans: Forming new partnerships to create job opportunities

Many of the city’s hospitals located in the Uptown area of New Orleans were severely damaged by flooding during Hurricane Katrina, including the Veterans’ Affairs (VA) Medical Center and Charity Hospital. As part of the recovery effort, the city of New Orleans, state of Louisiana and federal governments partnered to develop a new 70-acre medical complex to replace and expand these two hospitals. The Charity Hospital will be replaced by a brand new Louisiana State University Medical Center (UMC), while VA is on track to rebuild its old facility.

Due to the size of the medical complex, the state

17 Louise Story. “As Companies Seek Tax Deals, Governments Pay High Price.” The New York Times. December 1, 2012

18 Greg Leroy and Leigh McIlvaine, “Paid to Sprawl: Subsidized Job Flight from Cleveland and Cincinnati.” July, 2011. Accessed December 4, 2012

19 Business Location Efficiency Incentive Act

and federal governments chose to locate their new facilities in the Mid-City district, just a short distance from the former hospitals. This decision was met with controversy, as the sites selected for the new complex required the relocation of an existing historic neighborhood.²⁰ However, proponents of the project believed it was important to create a cohesive district in an area that could achieve multiple objectives. The BioDistrict facilitates the co-location of the UMC and VA hospitals, the Tulane University Health Science Center, Xavier University and School of Pharmacy, and Delgado College to anchor a thriving biosciences cluster that can support neighborhood revitalization and local economic development.

To assist with the implementation of the new biomedical district, the state of Louisiana’s legislature established the Greater New Orleans Biosciences Economic Development District (GNOBEDD), an organization that is dedicated to cultivating the bioscience industry in the city and state, with taxing and bonding authority. GNOBEDD has a 13-member board that includes representation from the major universities and hospitals, city government, state government, and economic development agencies.²¹ It is estimated that the combined VA and UMC hospitals will generate 5,500 permanent jobs within the first five years, plus 4,200 indirect jobs.²²

In a ten year period, assuming that the hospital complex will catalyze private investments, it is estimated that there will be additional direct and

20 Adam Nossiter. “Plan for New Orleans Hospitals Draws Outcry” The New York Times November 26, 2008. Accessed November 29, 2011

21 The board includes representatives from Louisiana State University (LSU) Health Sciences Center, Tulane University Health Sciences Center, Xavier University, Delgado Community College, the Mayor of New Orleans, the Louisiana Department of Economic Development, Greater New Orleans, Inc. and New Orleans Business Council, New Orleans Chamber of Commerce, and four members appointed by the Governor

22 BioDistrict New Orleans. “Economic Impact Study” October 29, 2010.





Figure 3: Greater New Orleans Bioscience Economic Development District
 Source: New Orleans BioInnovation Center

indirect job creation from the BioDistrict. In addition to permanent jobs, the study estimated that the project would also create 7,600 construction jobs per year during the first three years.

Recognizing that the new jobs created by the new hospitals would demand skilled workers, the New Orleans BioInnovation Center (a biotechnology incubator) and the BioDistrict commissioned a study to identify the gap and surplus of bioscience workers in the region. The study found that while for many occupations, the supply of workers exceeded or met demand, there were some occupations with a need for additional workforce training, including occupational therapists, physical therapists, and laboratory technicians.²³ In order to prepare the workforce for bioscience jobs, the BioDistrict has partnered with public schools, community colleges, universities, and workforce agencies to build and strengthen existing programs. For example, the BioDistrict has entered into a partnership with the Board of Elementary and Secondary Education to integrate biotechnology curriculum into public and charter schools, and has

²³ Research Edge. "Health Care and Biotech Workforce in the Greater New Orleans Area Overview - 2009" October 2009.

provided the New Orleans Charter Math and Science High School (Sci-High) with a location within the BioDistrict.²⁴ The first building to be completed in the VA Hospital medical center will be a recruitment and workforce center, which will house various health care training programs beginning in 2013. "

For more information:

- BioDistrict New Orleans.
- Southeast Louisiana Veterans Health Care System Project Legacy.
- Louisiana State University Medical Center.
- BioInnovation Center

The Hiawatha Line: Aligning transit investments with economic development

The Hiawatha Line, the first light rail corridor in the Minneapolis-St. Paul region, began service in 2004. The transit line links the region's major employment and activity centers, connecting downtown Minneapolis to downtown St. Paul, as well as the regional airport and Mall of America.



Source: MetroTransit

Largely because of its strong connectivity, the Hiawatha line has exceeded ridership forecasts, serving more than 10 million riders in 2008.

Since completion, the transit corridor has had a

²⁴ BioDistrict New Orleans. "Job Creation, Education and Training"



positive impact on the real estate market, resulting in higher property values along the line, and attracting new development.²⁵ From 2003 to 2009, almost seven million square feet of new commercial and residential space was built along the Hiawatha corridor, and much of it was concentrated in the station areas near the major employment centers and destinations.²⁶

Beyond the benefits to transit-oriented development and ridership, the Hiawatha line also provided better access to jobs for low-income workers. “The number of low-wage jobs accessible by 30 minutes of transit travel in morning peak hours increased by 14,000 jobs in lightrail station areas and by 4,000 jobs in areas with direct light-rail bus connections after the addition of the Hiawatha line and related transit network upgrades.”²⁷ In fact, low-income workers appear to have moved to locations along the line to take advantage of the superior accessibility to transit.²⁸

For more information:

- [University of Minnesota Center for Transportation Studies Research.](#)
- [Metro Transit Hiawatha Line](#)

Additional Resources

- [Center for Transit-Oriented Development series of papers on Transit-Oriented Development, Jobs and Economic Development.](#)
- [Good Jobs First Subsidy Tracker](#) identifying location of state government subsidies for economic development.
- [The New York Times government incentives database.](#)
- [Bureau of Labor Statistics employment estimates and projections.](#)
- [East Bay Economic Development Alliance “Building on Our Assets: Economic Development and Job Creation in the East Bay.”](#)
- [NCBioImpact workforce development for biotechnology industries in North Carolina.](#)

25 Edward G. Goetz, Kate Ko, Aaron Hagar, Hoang Ton, Jeff Matson. “The Hiawatha Line: Impacts on Land Use and Residential Housing Value” CTS Report 10-09 February 2010. Center for Transportation Studies, University of Minnesota

26 Nadine Fogarty and Mason Austin. “Rails to Real Estate: Development Patterns along Three New Transit Lines.” Center for Transit-Oriented Development. March 2011

27 Yingling Fan, Andrew Guthrie, Rose Teng. “Impact of Twin Cities Transitways on Regional Labor Market Accessibility: A Transportation Equity Perspective.” CTS Report 10-06. June 2010. Center for Transportation Studies, University of Minnesota.

28 *ibid.*



Making the Most of Transit Investments in Midsize Cities: A Look at Rapid Bus, Bus Rapid Transit, and Streetcars

Introduction

Across the country, midsize cities are investing in new rapid bus systems, bus rapid transit, streetcars, and other improvements to better connect suburbs with city centers, to move people between employment centers, and to improve overall connectivity among key destinations. When appropriate planning and coordination with land use is in place, these new transit investments promise to not only improve mobility for local residents, but can also be the catalyst for community revitalization, economic development, and improved connectivity between the transit system and surrounding community uses.

Transit's potential to achieve these goals can only be realized if cities and transit agencies work together to establish a vision and an inclusive process for the transit project. If a city enters the transit development process with a narrow vision for the project, then that is what it will get – a project that serves a narrow set of goals. But when a city establishes an aggressive set of goals and develops the partnerships to advance them, transit projects can help revitalize communities, be they streetcars, rapid bus, or BRT.

The Basics of Rapid Bus, Bus Rapid Transit, and Streetcars

“Rapid bus,” “Bus Rapid Transit” (BRT) and “streetcar” are umbrella terms that encompass several specific types of transit systems. The implications for community revitalization, mobility, and economic development vary depending upon the specific type of rapid bus, BRT, or streetcar project being implemented. The following section distinguishes

between the various types of rapid bus, BRT, and streetcar projects most commonly undertaken in midsize cities.

Rapid bus and BRT are best understood as bus service that has different characteristics with regard to speed, frequency, and passenger amenities than regular bus service. Rapid bus and BRT systems typically include some or all of the following features in order to achieve improved service:

- **Dedicated running ways** that allow buses to operate apart from the rest of the traffic. Rapid bus systems include limited or no dedicated lanes. BRT systems include a substantial amount of dedicated lanes.
- **Priority for buses at intersections**, e.g., by switching a traffic light to green when the bus approaches or providing a “queue jump” lane to allow the bus to bypass stopped traffic.
- **Frequent service**, typically 15-minute or better headway, makes the rapid bus or BRT system more convenient and attracts more riders.
- **Vehicles with level boarding and other amenities** serve both to attract more riders and to speed boarding, as riders do not have to go up and down stairs.
- **Off-board fare collection** speeds boarding by allowing passengers to pay for their trip before boarding the bus.
- **Greater distance between stops** allows the rapid bus or BRT system to achieve greater speeds and reliability.
- **More substantial stations** than a typical bus stop, including seating, real time arrival information, shelter, and other amenities.



- **Unique branding** serves to distinguish the rapid bus or BRT system from regular bus service, making it easier for riders to identify and use.

Not every city requires the same level of investment in running ways or other features in order to achieve its transit goals. Cities must choose the level of service that is right for them, based upon local congestion and density, location of key destinations, and physical characteristics of the corridor. Improvements over conventional bus service can be realized with rapid bus or BRT as long as the service provided is frequent, convenient, and reliable. When the BRT system has a significant percentage of dedicated lanes, it can also be a focal point for economic development.

Streetcars operate on rails and are usually powered by electricity either overhead or through an underground third rail. Streetcars operate in shared lanes in mixed traffic or dedicated lanes on streets and usually operate as a circulator, connecting destinations in and around downtowns with other major entertainment, business, and activity centers. The average streetcar makes frequent stops, is approximately 2-3 miles in length, and has an average speed of about 3-5 miles per hour.

In North America, there are four major categories of streetcar systems:

- **Survivor streetcars** are survivors of more extensive systems of the past. Examples include Philadelphia, New Orleans, and San Francisco.
- **Heritage (Vintage) streetcars** use streetcar vehicles dating from roughly 1900 – 1950. These cars are usually originally preserved cars that are restored to accurate or nearly accurate historical standards. Examples include: Memphis, Kenosha, and San Francisco (F-line).
- **Replica streetcars** use a replica of a streetcar from the early 20th century. These cars are usually built to accurate or nearly accurate standards of past vehicles. Replica streetcars can be retrofitted to include modern conveniences such as air conditioning. Examples include Tampa, Little Rock, and Charlotte.
- **Modern streetcars** use contemporary vehicles. These streetcars use newer technology, have greater carrying capacity than survivor, heritage, or replica vehicles, and have reduced loading and unloading times due to car design elements such as additional doors. Examples include Portland, OR and Tacoma, WA as well as planned systems in Washington, DC, Salt Lake City, and Tucson.

As with rapid bus and BRT, the different types of streetcar systems can each have a different impact on economic development, land use, and transit ridership. The choice of which system to use depends upon the intention, budget, and vision of the city. Does the city want the streetcar to serve an economic development purpose with a focus on tourism, or does the city want the streetcar to play an integral transit and mobility role for local residents that can also influence land use? Heritage and replica streetcars are good tools for the former, but not often the latter because they do not typically serve as an efficient transit alternative. Alternatively, modern streetcars have greater carrying capacity, more frequent services, and focus more on overall connectivity for local residents.

Making It Work: Integrating Transit and Land Use

Land uses around major transit investments can have a big impact on the success of the system. The surrounding uses and density can promote transit ridership, connections to other modes, and access to destinations such as employment and entertainment districts. A mix of transit-supportive uses around transit stops not only creates or supports the density of people and infrastructure needed to support enhanced transit service, but also encourages the creation of quality places, where the combination of transit service, walkable neighborhoods, jobs, and



housing allows for more affordable, healthier lifestyles. Planning and zoning changes that actively promote the transit investment should:

- Focus on compact mixed-use development.
- Provide a range of housing options for various incomes.
- Provide a range of community uses and amenities.
- Create an environment that supports bikes and pedestrians.
- Facilitate high-quality public space including parks, plazas and public art.
- Develop traffic-calming measures and limit curb cuts.
- Create well-landscaped streets that frame the street.
- Develop buildings with minimal setbacks and activity on the ground level.

Factors such as the local political, social, and economic climate, the quality and frequency of the new transit service, and its ability to meet the needs of the user contribute to the transit system's ability to stimulate economic development and shape surrounding land uses. In addition, the choice of transit mode - rapid bus, BRT, or streetcars – also affects the system's potential for shaping land use.

Rapid Bus and BRT

Rapid bus and BRT projects not only move and connect people to existing trip generators such as hospitals, universities, downtowns, or business or shopping districts, they can also support redevelopment efforts. Rapid bus systems, which lack a significant percentage of dedicated lanes, can support a city's redevelopment plans by providing improved mobility between new or redeveloped destinations; there is little evidence to date of midsize cities using rapid bus to create development potential on their own. A BRT system with a full complement of features and amenities along with a significant

percentage of dedicated lanes can not only support broader revitalization goals; it can attract economic development and be a focal point for revitalization efforts.

Given its various levels of implementation, rapid bus and BRT can be scaled to meet a midsize city where it is, financially or otherwise. Rapid bus and BRT projects can be implemented incrementally as funding becomes available. Dedicated-lane BRT, while generally more costly, shows potential for helping to shape surrounding land use, when city planners and transit planners work in concert. Rapid bus can improve mobility and when city planners and transit planners work together, help to support local redevelopment plans by providing a transit option for new residents and businesses. However, given that only a few rapid bus and BRT projects are currently operating in midsize cities, and that development around existing projects has slowed as a result of the recession, future research will be needed to assess the on-going land-use impacts of both BRT and rapid bus systems in midsize cities.

Streetcars

In general, streetcars have the potential to shape land use because this technology is a permanent investment that can attract developer interest and contribute to placemaking in communities. However, the impact of modern streetcar systems tends to differ from that of heritage or replica streetcar systems.

Heritage and replica streetcars generally serve developed main streets or downtowns with limited focus on shaping land use. They typically fit into the existing urban fabric of the city with established densities and forms less likely to change. These streetcar systems typically focus on the mobility of tourists or local business patrons and generating economic and business activity. These streetcars serve a localized economic development purpose, but



often do not include an integrated land use planning strategy. They generally are not built specifically in order to shape land uses, but to support overall revitalization efforts.

Modern streetcars have increased carrying capacity and frequency and can serve as a transportation alternative for local residents and commuters. They have been shown in larger cities both to help spur economic development and to shape land use. Midsize cities operating or considering modern streetcars are proactively planning for their systems not only to improve connectivity among key destinations, but also to be the focal point for transit-oriented, walkable neighborhoods.

Overall, these differences between the types of streetcar systems deal with their ability to shape land use, not their overall ability to generate economic and business activity. Research has shown that any type of quality streetcar system with dependable service and frequency, regardless of technology, can accomplish the latter. The appropriate choice of streetcar depends on the intention and goals of the community, as each system type plays a different role.

5 Strategies for Building Sustainable Midsize Communities with Transit:

Whether or not placemaking is a stated goal for any particular transit project in a midsize city, every transit project needs supportive land uses at its stations to attract riders, upon which all transit systems depend. Putting a transit system on the street does not automatically integrate it with land use. Instead, the city and transit agency must integrate corridor level and station area land uses with the transit investment by proactively planning for such integration. The following recommendations are intended to maximize the likelihood that a transit investment will yield benefits for the city.

1. Choose the mode that best fits your city's vision for the future.

Is your city looking to become a tourist destination? Are you struggling with growing traffic congestion? Are you looking to stimulate downtown development? Each transit mode has its purpose. Heritage streetcar systems offer a sense of nostalgia for riders and serve visitors to downtown and main street areas well. Rapid bus focuses on enhancing connections and mobility for riders and supporting broader revitalization efforts. Full-fledged BRT and modern streetcars aim to improve mobility and to shape land use, influence economic development, and contribute to high ridership. The decision to invest in a new transit system should support and complement the city's overall vision for its future.

Regardless of which mode is selected, you should design and operate the service so that it is attractive to riders and well-integrated with the existing transit network: Ridership and development potential will not be realized if the transit service provided is not frequent, convenient, and reliable. One of the advantages of rapid bus, BRT, and streetcars over conventional bus service is that they are intended to run frequently, so that riders will not need to consult a schedule to know when the bus or streetcar is supposed to arrive. Stations must be easily accessible from surrounding neighborhoods, and the utility of the new investment will be extended if it is supported by a network of other local and regional transit services. The new services must be designed with these features in mind if the full ridership potential of the route is to be realized.

2. Pick a route with potential.

Not all corridors will yield the same result in terms of ridership or development potential. Looking at existing residential and employment densities, ridership on existing transit, and major destinations will help to identify the best route to meet



community goals. Market strength will also have an impact on the success of the investment, as a strong market in the transit corridor will often secure more investments than a weaker market or corridor. In both strong market and weak market areas, however, there is the risk that new investments could displace existing businesses and residents; cities should work to mitigate these effects so that the existing community can benefit from revitalization.

3. Coordinate early and often among land-use and transit staff.

Cities that consider the land use and economic development potential of transit upfront have greater success integrating the transit system with other city goals. Transit has the ability not only to connect people to opportunities, but to impact the development of the community. The cities that recognize the role of transit in community development – and convey that goal to developers, community members, and other stakeholders – are more likely to see a higher return on the transit investment.

Realizing this goal requires close working relationship between the city department responsible for land use planning and the transit agency. In some cities, the transit agency is a city department, not a stand-alone agency, which can allow for easier coordination of the transit and land-use development processes. But even where the city and transit agency are separate entities, strong relationships can and should be built early in the project development process.

4. Engage regularly with business interests, institutional interests, property owners, developers, and community members.

Cities should work with stakeholders in the community to educate them about the potential impact of the new service. While this is true for

both streetcars and bus-based investments, it is particularly important for BRT since so few midsize cities currently operate such systems. As a result, developers and businesses often hesitate to take the risk of investing along a BRT route. By proactively reaching out to the business community and major institutions, some cities have been able to generate financial support for their projects.

Seeking community input early and often is often a prerequisite to success. If the community believes in the investment, the process is more likely to be smooth and successful. Education campaigns in affected communities should explain the need for the new transit investment and include discussion of the relationship of land use and transportation, the desired land use forms, and the range of alternative transportation available in the future. Since many new transit lines depend upon voter-approved funding for construction and/or operations, developing support in the broader community is often essential.

5. Enact supportive zoning.

Zoning that considers transit-supportive land uses and is planned for the right densities and intensities is essential. In some of the most successful cities, the transit-supportive zoning was enacted well before the new transit service began operations. In this way, appropriate densities and transit-supportive uses can already be in place along the proposed transit corridor, helping to make the case for transit and avoiding years of low ridership while waiting for the zoning to be changed.

Case Studies

Grand Rapids, MI (BRT):

Once a lumber and furniture-making town, Grand Rapids has reinvented itself as a hub for high-tech and medical industries. With a large student population and a focus on social equity, the city is redesigning its



downtown so that it is a more walkable, inviting place to live.

The high-level BRT system now under construction is a focal point for the city's efforts. The project includes dedicated lanes for 65 percent of its 9.6-mile route, and will connect major destinations in downtown Grand Rapids such as Michigan State University, Grand Rapids Community College, and DeVos Place Convention Center and Performance Hall. In the central business district, 30,000 jobs will be within a quarter-mile of the BRT.

The Silver Line BRT has been in planning for nearly a decade, during which time city planning staff has met regularly with planners at The Rapid, Grand Rapids' transit agency. The city has already taken a number of actions designed to support the coming BRT line. Recognizing that transit works best when the surrounding land uses provide the system with a critical mass of riders and destinations, the city has created a TOD zone in its zoning code for the areas around BRT stops, with higher height limits and the ability to waive parking requirements entirely.

The city and transit agency also engage regularly with the business community and citizens' groups. As a result of their educational efforts, some developers have shown interest in properties along the BRT line, and one grocery store has already committed to locating next to a BRT stop.

The Silver Line will be the first BRT line in Michigan, and as a result of close coordination between the city and the transit agency, the new service will help the city realize its vision for a sustainable future.

[More information on the Silver Line BRT.](#)

Eugene, OR (BRT):

As the 21st century approached, the Board of Directors of Lane Transit District, serving Lane County and the cities of Eugene and Springfield, OR, instructed the agency's staff to identify strategies that would allow transit in the region to take a "quantum leap." Transit planners worked with the community to develop a proposal for a 61-mile BRT network – the first of its kind in a midsize city. In 2007, the first line of the Emerald Express (EmX) BRT opened. This route connects the downtowns of Eugene and its partner city, Springfield, and also serves major destinations in the region such as the University of Oregon. The line connecting the two downtowns was seen as the backbone of the future BRT network. It was developed in order to reduce automobile use along the busy Franklin Boulevard corridor, and was selected based upon its high traffic volume, heavy transit ridership, and population density.

In 2009, the Federal Transit Administration evaluated the outcomes of the first EmX line. In that report, FTA determined that while travel times along the BRT route were only slightly faster than on the pre-existing conventional bus route, ridership on the BRT line was growing significantly (ridership had more than doubled compared to the previous service) and riders reported that the service was much improved in terms of its reliability. FTA concluded that Lane Transit District had successfully branded the BRT system as a reliable, easy-to-use, and clean alternative to the automobile. Although redevelopment of the corridor was not a primary goal of the project, FTA found that investors showed an increased interest in land near the BRT line.

[More information on the EmX BRT](#)

Flagstaff, AZ (Rapid Bus):

Since the approval of the Long Range Transportation Plan in 2000, the Northern Arizona



Intergovernmental Public Transportation Authority (NAIPTA), has been working in consultation with the community, elected officials, the Flagstaff Metropolitan Planning Organization (MPO), and the city on a clear vision to build the Mountain Link rapid transit system. NAIPTA's public engagement strategy has created a heightened awareness about the transit initiatives, gaining the support of residents and local partners such as the Northern Arizona University.

In 2008, two years after an unsuccessful ballot measure, NAIPTA won approval for an itemized list of improvements, each with its own dedicated tax percentage over a 10-year period, including funding for Mountain Link, the city's first rapid bus service that links Downtown Flagstaff, Northern Arizona University, and an off-campus residential and commercial area called Woodlands Village. The success of the 2008 measure was no doubt attributable to the public engagement strategy that included a series of open houses to help people understand the projects they were voting on. NAIPTA also utilized the local media to create a series of informative articles about how different transportation projects can support future development in the region.

Now up and running, the Mountain Link has created greater connectivity for students to access Northern Arizona University, downtown locations, and off-campus housing. Data on transit ridership indicate 600,000 trips per year on the Mountain Link line. In addition, Northern Arizona University has been able to capture the momentum from the rapid bus line by closing some parking lots, creating more green space on campus, and creating a more pedestrian-friendly environment for the students and faculty.

[More information on Mountain Link.](#)

Little Rock, AR (Replica Streetcar):

In the mid-1990s, the cities of Little Rock and North

Little Rock, together with Pulaski County, developed a revitalization plan to strengthen their urban core. A replica streetcar system that would circulate through both downtowns was an integral part of that plan.

The River Rail streetcar opened in 2004, and an extension serving the Clinton Presidential Library opened in 2007. Today, the River Rail is heavily used by tourists to the two cities and by those attending special events downtown. In 2011, the system provided 100,402 rides. New features, such as real-time arrival information, have been added to encourage more local residents to use the system as well.

To better understand how the River Rail supports the overall revitalization effort, the Central Arkansas Transit Authority conducted a study of business investment and development in the areas adjacent to the streetcar line. The study found that since 2000, these areas have seen the development of 957 new residential units, the creation and/or retention of 12,571 downtown jobs, and more than \$800 million of construction investment.

According to the study, from 2000 to 2012, for every \$1 local taxpayers paid for construction of the River Rail, an additional \$135 was invested into capital improvements and revitalization efforts in the downtowns by private developers and government organizations. The study also found a 21 percent increase over that period in people living near the streetcar line and a 56 percent increase in residential property values in that area, as well as increases in hotel tax and food tax revenues in downtown North Little Rock. The study concludes that not only has River Rail promoted downtown tourism, it has also succeeded in meeting its goal of supporting the downtown revitalization efforts.

[More information on the River Rail.](#)



Additional Resources on Transit and Land Use in Midsize Cities:

helps practitioners identify the most appropriate and effective planning tools for supporting affordable housing and mixed-income neighborhoods near transit.

- [“Midsize Cities on the Move: A Look at the Next Generation of Rapid Bus, Bus Rapid Transit, and Streetcar Projects in the United States”](#), a recent report by Reconnecting America, explores best practices in planning, funding, and implementing transit projects in midsize cities.
- [Street Smart: Streetcars and Cities in the 21st Century](#), publication featuring an overview of streetcars including their economic development impacts. Includes case studies and information on streetcar history, planning, funding and implementation.
- [TOD 203: Transit Corridors and TOD](#), Center for Transit-Oriented Development booklet sponsored by the Federal Transit Administration, illustrates how planning on the corridor scale can help transit investments capture the benefits of TOD.
- [How to Link Land Use and Transportation Planning](#), “how-to-guide” developed by the Strafford Regional Planning Council in New Hampshire, easy to read 8-page guide on coordinating land use and transportation planning.
- [Maximizing the Return on Transit Investment](#), paper produced by the Center for Transportation Studies, develops and analyzes different scenarios to maximize return on transit investments planned in the Twin Cities.
- [Bus Rapid Transit, Volume 1: Case Studies](#), Transit Cooperative Research Program (TCRP) publication, presents case studies of 12 urban areas implementing bus rapid transit (also includes international examples).
- [Urban Design to Reduce Automobile Dependence](#), report in the International Journal of Suburban and Metropolitan Studies, explores the issue of transit supportive density and the link between density, access to amenities and service levels of public transportation.
- [Mixed-Income TOD Action Guide](#), online guide by the Center for Transit-Oriented Development,



Incorporating Healthy Community Strategies into the Planning Process

Introduction

Creating sustainable communities is fundamentally about creating healthy and complete communities. The design of our neighborhoods determines how we get from place to place, where we get our food, where we play, where we seek medical help and how we interact with others. Our access to these opportunities in turns affects our physical and mental health, and evidence is mounting that the built environment has a significant effect on many of our nation's most severe public health challenges. As a result, the people responsible for planning our communities have found a new ally with public health professionals, and collaborations are forming around the country to integrate health considerations into planning decisions and processes.

The intersection of urban planning and public health is still an emerging field, but given our nation's rising rates of chronic disease, obesity and mental health problems, it is critical that those planning sustainable communities consider health in their decisionmaking, utilize tools such as health impact assessments to understand the issues facing their constituents and develop strategies to improve health outcomes for everyone.

This issue brief will describe some of the goals, tools and strategies that grantees may consider as they work to incorporate health into their planning processes, as well as case studies of successful implementation of these methods. With the right mix of tools and policies, our communities may start to see obesity rates decline, physical activity levels increase and overall health outcomes improve as more people have access to healthy food, recreational facilities, active transportation modes and everything else they need to thrive.

The Importance of Health to Sustainable Communities

“The modern America of obesity, inactivity, depression, and loss of community has not ‘happened’ to us. We legislated, subsidized, and planned it this way”¹

It is no secret that the average American is becoming larger. According to the Centers for Disease Control and Prevention (CDC), as of 2009, over two-thirds of Americans are overweight or obese, with obesity rates exceeding 30% in 12 states.² The obesity rate in Colorado, the leanest state today, just crossed the 20% threshold and is 5% higher than the national average in 1980.³ The Surgeon General recommends at least 30 minutes of moderate exercise five days a week to maintain one's health, yet less than half of Americans currently meet that standard.⁴ While researchers, public health professionals, and government officials have traditionally blamed the nation's poor health on behavioral factors such as bad eating habits and lack of exercise, they are increasingly shifting some blame to the built environment. As the nation's population has decentralized into suburbs designed around the automobile, people spend more time in their cars, leaving less time and opportunities for physical activity and the preparation of healthy, nutritious

1 Frumkin, H., Frank, L., & Jackson, R., 2004. *Urban Sprawl and Public Health*. Washington, DC: Island Press: p. xiv.

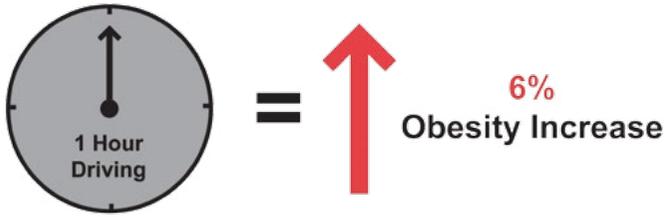
2 U.S. Centers for Disease Control and Prevention, 2012. [FastStats on Physical Activity and Exercise](#).

3 Ibid.

4 U.S. Centers for Disease Control and Prevention, 2012. [FastStats on Physical Activity and Exercise](#).



Effects of Low Density Neighborhoods



Zhao & Kaestner 2009

Source: The Denver Regional Equity Atlas (milehighconnects.org)

food. One study found that each additional hour of driving was associated with a 6% increase in the likelihood of obesity,⁵ while another found that a White male living in a suburban cul-de-sac is expected to weigh 10 pounds more than one living in a highly walkable neighborhood with nearby shops and services.⁶ Conversely, Americans who walk or bike to work are less likely to be obese, have high blood pressure, or be at risk for cardiovascular disease.⁷ Using public transportation has also been shown to promote physical activity in a number of research studies. Transit users on average take 21% to 30% more steps per day than people who drive to work and are more likely to be physically active and maintain a healthy weight.^{8 9 10} In Charlotte, light rail riders

lost an average of 6.45 pounds after switching from driving to transit for a year.¹¹

The health benefits of walking, bicycling and using public transportation to get from place to place are well-documented, but wide roads and fast-moving cars are major barriers to using these modes, and land use and zoning patterns isolate many Americans from their primary destinations.¹² In addition, many low income and minority communities living in urban areas that would be considered walkable and transit-rich have some of the highest rates of chronic disease and lowest levels of physical activity due to safety issues and the lack of amenities such as grocery stores, banks and medical clinics. Yet survey after survey finds that people want more transportation choices and amenities within walking distance. One survey found that the single largest reason (61%) that people did not walk more was that things were too far or inconvenient.¹³ A recent survey by the American Association of Retired Persons (AARP) found that approximately 40% of older Americans have inadequate sidewalks and crosswalks in their neighborhoods, 55% do not have bike lanes or paths, and nearly 50% feel unsafe crossing streets near their homes.¹⁴ Over 50% would walk, bike, or take the bus more if the infrastructure was better. A 2011 survey by the National Association of Realtors found that more than three-quarters of Americans consider having sidewalks and places to walk a top priority. Six in 10 say they'd prefer a smaller house in a neighborhood with destinations to walk to rather than

5 Frank, L., Andresen, M., & Schmid, T, 2004. Obesity relationships with community design, physical activity, and time spent in cars. *American Journal of Preventive Medicine*, 27(2): 87-96.

6 Goldberg, D., Frank, L., McCann, B., Chapman, J., & Kavage, S., 2007. *New Data for a New Era: A Summary of the SMARTRAQ Findings: Linking Land Use, Transportation, Air Quality and Health in the Atlanta Region*. Atlanta, GA: Author.

7 Gordon-Larsen, P., Boone-Heinomen, J., Sidney, S, Sternfeld, B., Jacobs Jr., D.R., & Lewis, C.E. (2009). Active commuting and cardiovascular disease risk. *Archives of Internal Medicine*, 169(13): 1216-1223.

8 Wener, R. & Evans G., 2007. "A Morning Stroll-Levels of Physical Activity in Car and Mass Transit Commuting." *Environment and Behavior*, 39(1): 62-74, January 2007.

9 Edwards R., 2008. "Public Transit, Obesity, and Medical Costs: Assessing the Magnitudes." *Preventive Medicine*, 46(1): 14-21, January 2008.

10 Lachappelle, U., & Frank, L.D., 2009. Transit and health: Mode of transport, employer-sponsored public transit pass programs. *Journal of Public Health Policy*, 30: S73-S94.

11 "Public Transit Systems Contribute to Weight Loss and Improved Health, Study Finds." *Science Daily*, June 29, 2010.

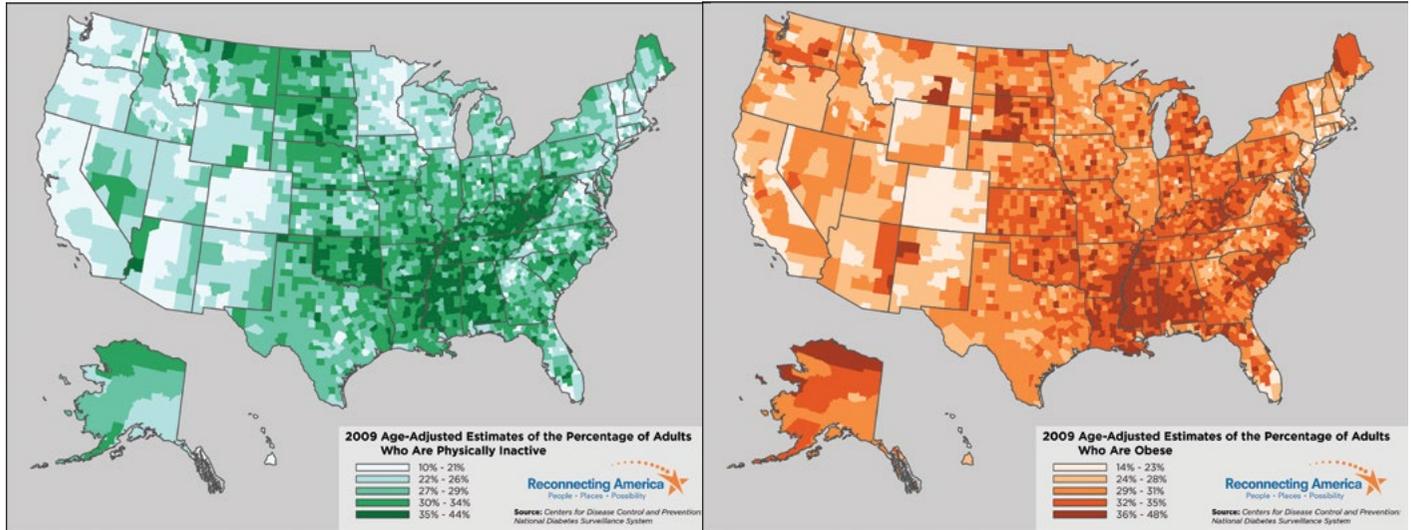
12 National Complete Streets Coalition, 2009. [Complete streets fact sheet: Health](#).

13 Surface Transportation Policy Partnership, 2003. [Americans' attitudes toward walking and creating more walkable communities](#).

14 Skufca, L., 2008. [Is the cost of gas leading Americans to use alternative transportation?](#) AARP Knowledge Management.



Obesity and Physical Activity Rates Among U.S. Adults, 2009



Source: U.S. Centers for Disease Control and Prevention, 2009

a bigger house in a less walkable neighborhood.¹⁵

This emerging research into the effects of community design on health reveals a need to start considering health impacts when making decisions about the future of our communities. The following section outlines some key goals that communities should consider incorporating into their sustainable communities plans and processes

Goals, Tools & Strategies for Creating Healthier Communities

Goal 1: Every citizen has access to healthy and affordable food

A “food desert” is a place without a grocery store or other place to buy healthy, fresh food within a reasonable distance.¹⁶ The distance varies depending on the transportation options available, but typically is defined as one mile for those who travel on foot or use public transportation to get groceries. The U.S. Department of Agriculture (USDA) recently

15 National Association of Realtors, 2011. [Community Preference Survey](#).

16 U.S. Centers for Disease Control & Prevention, 2012. [A Look Inside Food Deserts](#).

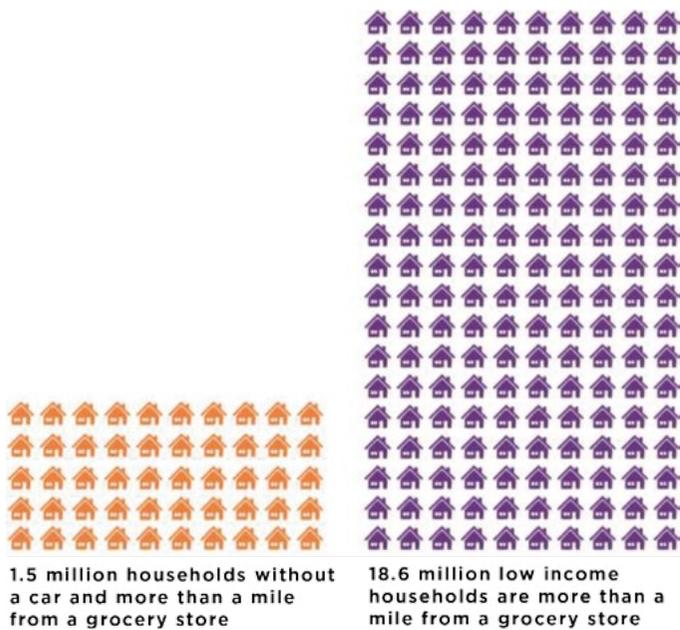
launched an interactive map of food deserts across the country, which illustrates the severity of this problem, especially in smaller rural communities.¹⁷ The USDA estimates that as of 2009, 11.5 million Americans live in low-income areas more than a mile from a supermarket, and 2.3 million of these Americans also do not have access to a car. People living in these areas spend 19.5 minutes traveling to a grocery store compared to the national average of 15 minutes. Many lower income communities are food deserts, as grocery stores are reluctant to move into places where people have less money or there are safety issues, so these people often have to shop at convenience stores with less healthy options. The California Center for Public Health Advocacy found in 2005 that the state had four times as many fast food restaurants and convenience stores as supermarkets and produce vendors, with the highest rates in low-income communities.¹⁸

Placing more grocery stores into these food deserts should be a top priority for every community, but it

17 U.S. Department of Agriculture Economic Research Service, 2012. [Food Desert Locator](#).

18 California Center for Public Health Advocacy, 2007. [Searching for Healthy Food The Food Landscape in California Cities and Counties..](#)





Source: U.S.D.A. Food Environment Atlas, graphic adapted from Reconnecting America's, [Are We There Yet? report](#).

often takes concerted efforts and alternative financing to make it happen given the reluctance and financial infeasibility of traditional retailers. Farmer's markets, mobile grocery trucks and convenience stores that sell fresh fruit and vegetables are smaller-scale and more short-term solutions. Community gardens can also help foster social interaction and strengthen neighborhood cohesion. Seattle's P-Patch program is one of the largest community garden projects in the country, with 68 gardens totaling 23 acres. Most gardens are in public parks but the City works with property owners to set aside land for gardens all over the city. The City's comprehensive plan further supports community gardens with a goal of one garden for every 2,000 households in high-density neighborhoods ("urban villages").¹⁹

One of the largest food access success stories is the State of Pennsylvania's Fresh Food Financing Initiative (FFFI), a public-private partnership designed to expand access to full-service grocery stores and

healthy food choices for Pennsylvania residents.²⁰ The impetus was a national study that found that the City of Philadelphia had the second lowest number of supermarkets per capita of major cities in the US. Today the Reinvestment Fund, Food Trust, and Greater Philadelphia Urban Affairs Coalition jointly manage the \$120 million grant program. Since its founding, the FFFI has helped build 88 new grocery stores in 34 counties, creating or preserving over 5,000 jobs in the process. Over 500,000 people now have improved access to food as a result of this initiative. In Philadelphia alone, the program helped to open 26 supermarkets, guided 130% increase in food stamp redemption at farmers' markets, and signed up 500 corner stores in a Healthy Corner Store Initiative (cash incentive to sell produce and coolers for storage). The success of the Pennsylvania program has led other states to experiment with similar programs, and even the federal government has proposed a national fresh food financing initiative, with the goal of eliminating all food deserts in the entire United States within the next seven years.^{21,22}

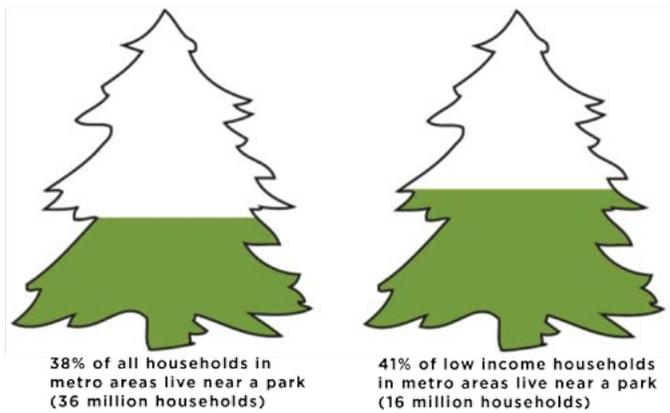
Goal 2. Provide access to gathering and recreational spaces

Communities with no parks often have worse health outcomes, as people who have no safe place to participate in recreational activities end up not participating at all. Yet many communities have been able to carve out pocket parks or find funding for recreation centers in low-income neighborhoods to improve these disparities. Across the U.S., parks tend to be located in wealthier neighborhoods, making park access not just about health but also about fairness. Los Angeles, for example, has 23,000 acres

20 The Food Trust, 2011. [Supermarket Campaign](#).
 21 U.S. Department of Health & Human Services, 2010. [Obama Administration Details Health Food Financing Initiative](#).
 22 U.S. Department of Health & Human Services Office of Community Services, 2010. [Healthy Food Financing Initiative](#).

19 City of Seattle Department of Neighborhood Services, 2011. [P-Patch Community Gardens-Growing Communities](#).





SOURCE: Reconnecting America's, *Are We There Yet?* report

of park land, most of it concentrated near the Santa Monica Mountains — which bisect the city — and adjacent to high-income communities like Brentwood and Malibu. It has been estimated that almost 40 percent of L.A. County residents live too far away from a park to use it frequently.²³

Access to parks and open space ranks high on the list of priorities for Americans, who have repeatedly voted for bond measures to pay for the acquisition of open space. The national nonprofit Trust for Public Land -- which is working toward the goal of ensuring that everyone in the U.S. has access to a park within a 10-minute walk of their home -- has over the past decade helped communities get 496 ballot measures approved that have provided \$34 billion in new funds for parks and land conservation. They have also recently developed ParkScore.org, an interactive mapping website that provides information on the nearest parks and recreation centers with the goal of promoting “park equity” by displaying demographic information so everyone can see which neighborhoods are park-deficient. For example, while 86 percent of all residents in Denver are within a half-mile walk of a park, affluent neighborhoods are more likely to be park-adjacent. And because Denver is one of the fastest growing areas in the U.S., the ratio of parks to population is slipping, and Denver Parks and Recreation is now using the ParkScore website to

23 Trust for Public Land, 2012.

prioritize investment in neighborhoods with the most acute need for open space. Atlanta’s BeltLine and New York City’s High Line Canal are also innovative examples of transforming abandoned rail right-of-way into new parks.

Goal 3. Every neighborhood has a variety of safe, convenient and accessible transportation options

Walking, biking and transit are all healthy, cheap and environmentally-friendly modes of transportation and represent good alternatives to a car when destinations are nearby and there is a safe route available. Encouraging the use of active transportation modes and transit has become an important element of transportation planning in recent years, and most communities have already created separate pedestrian, bicycle or transit master plans to prepare for a future where an increased share of the population gets around in a variety of different ways. As more people take to the streets using these alternative modes, however, safety and equity concerns arise with how to accommodate these users while also limiting conflicts with car drivers. Moreover, given funding limitations, many jurisdictions are struggling to build the infrastructure needed to accommodate pedestrians, bicyclists and transit users on routes that they desire. Given the myriad of safety and funding challenges associated with active transportation and transit, community outreach is essential to ensure that all decisions consider the needs of the residents living in those neighborhoods. Collaboration is also important, as funding may be available from other government departments such as public health, or even philanthropic foundations that care about safety and the environment and are willing to make small- or large-scale investments in communities. Getting schools on board with active transportation is also a key strategy, especially utilizing Safe Routes to School funding to add sidewalks, bike paths, crosswalks and other improvements near elementary and middle



schools, so that children was walk or bike safely to school.

Including health departments in the long-range transportation planning process can also help ensure that the health impacts of active transportation and transit are considered when planning for the next 20-30 years of a community. In Nashville, the MPO has incorporated public health into its regional transportation plan (LRTP),²⁴ highlighting the importance of transportation options to regional health and quality of life. The LRTP includes long-term plans for a bicycle network and transit network, which while idealistic and visionary at this point, lay the groundwork for the region to improve its health outcomes through the built environment. Approximately 70% of roadway projects must include sidewalks, bicycle lanes, or other improvements to promote active transportation, up from 2% in the last LRTP. The LRTP also makes \$2.5 million available for active transportation infrastructure in just the next several years.²⁵ The MPO also conducted a regionwide bicycle and pedestrian study in 2009 to inventory sidewalks and bicycle facilities and gather community input on where the greatest needs for investment were. This document helped planners identify projects for the LRTP.

Goal 4. Institute a Strong Complete Streets Policy

Complete streets policies aim to plan, design, and operate streets so that they are “safe comfortable, and convenient” for users of all ages and abilities, including pedestrians, bicyclists, public transit

24 Nashville Area Metropolitan Planning Organization, 2011. [Regional Transportation Plan](#).

25 American Public Health Association, 2011. [Incorporating Health in Regional Transportation Planning. A presentation by Leslie Meehan of the Nashville Area MPO.](#)

riders, and motorists.²⁶ Instituting a complete streets policy sends a strong message that decisionmakers support walking, biking and transit usage and that all future transportation decisions will be made with these users in mind. As of December 2012, over 400 jurisdictions and 27 states have adopted complete streets policies. These policies take many forms, from legislative ordinances that require all streets to be built with sidewalks, bike lanes and other infrastructure, to more informal resolutions or internal policies that encourage complete streets but do not go as far as requiring them. Some communities have created design guidelines to assist with implementation of complete streets. The City of Charlotte’s Urban Street Design Guidelines have helped the growing city design streets that accommodate all users and support public transit.²⁷ The Guidelines “describe the land uses and urban design elements that can best complement each type of street—with the intention that street design and land use/urban design decisions will reinforce each other.”²⁸ The City’s six-step process for creating a network of context-based, complete streets ensures that all transportation projects consider existing and future land uses, urban design, and transportation contexts before designing streets. As a result, street design addresses the needs of all users and considers the trade-offs of not including adequate bicycle and pedestrian infrastructure. The guidelines contain a whole chapter on how to address trade-offs for each user of the road, which helps planners and engineers identify how a project will affect various modes of transportation. In 2009, the Environmental Protection Agency (EPA) awarded Charlotte the National Award for Smart Growth Achievement, which “recognizes approaches to development that respect the environment, foster economic vitality, and enhance quality of life.”

26 National Complete Streets Coalition, 2012. [Complete Streets Fundamentals](#).

27 City and County of Charlotte, 2007. [Urban street design guidelines policy summary](#).

28 Ibid, page 1.



Goal 5. Make Health Impact Assessments A Routine Part of the Planning and Development Process

Health impact assessments are emerging as a useful tool for planners to incorporate public health principles into planning decisions. They also allow health and medical professionals to provide expert input into the planning process, as well as present rigorous evidence-based research in support of decisions. While regions in California have taken the lead in performing HIAs, especially the Bay Area, they are also being used in Denver, the Twin Cities, Atlanta, and other regions, as part of transit corridor planning. The San Francisco Department of Health has developed a tool to measure health impacts in communities. The Healthy Development Measurement Tool analyzes how development affects social and physical environments important to health.²⁹ It was one of the first attempts to quantify health impacts from development in communities, and in San Francisco it has revealed major health disparities in lower-income neighborhoods. The average life expectancy in low-income areas of San Francisco was up to 28 years lower for men and 25 years for women compared to the highest income areas.³⁰ The tool also provides evidence of the need for more affordable housing in the city, as the places with the most health benefits tend to be near transit stations and/or in walkable neighborhoods. Communities around the nation are now using the HDMT to measure health impacts associated with development and infrastructure projects.³¹ The Denver Housing Authority utilized the HDMT as part of its redevelopment plan for a public housing site near a light rail station.³² Several community

groups led an HIA along the Central Corridor light rail line that will connect Minneapolis and St. Paul.^{33,34} The University of Texas Medical Branch conducted an HIA in Galveston to measure the health impacts of post-disaster recovery from Hurricane Ike.³⁵ Humboldt County in Northern California is using the HDMT as part of its general plan update.³⁶ For more examples, view the interactive map on the [Health Impact Projects website](#)

Goal 6. Utilize Existing Health Data from Local Health Departments, and Collect Additional Data Where There Are Gaps

Most health data is available only at the county level, so it is difficult to examine local health outcomes at the neighborhood level. While this is a larger challenge that needs to be addressed at the national level, local agencies can get creative in finding ways to collect data about health, especially in low income neighborhoods. This could involve community health surveys, paying for additional data collection or oversampling as part of ongoing surveys such as the Behavior Risk Factor Surveillance Survey, or using proxies such as vital statistics data or Census/American Community Survey data on educational attainment and income to make inferences into what is causing negative health outcomes in certain communities.

In the Denver region, a collaboration of nonprofits and philanthropic foundations created a Regional Equity Atlas that maps out the region's major origins and destinations in relation to the current and future transit network, emphasizing the enhanced access to opportunity that transit will provide to all of

Redevelopment.

33 Health Impact Project, 2012. St. Paul Light Rail HIA.

34 Isaiah Minnesota, 2012. [Health Corridor for All](#).

35 Public Health Practices, 2012. [Adapting the HDMT to Post-Disaster Planning Initiatives](#)..

36 UCLA HIA Clearinghouse, 2012. [Humboldt County General Plan Update](#).

29 San Francisco Department of Public Health, 2012. [Background on the Healthy Development Measurement Tool](#).

30 San Francisco Department of Public Health, 2012. [Benefits to Health & Equity](#)..

31 San Francisco Department of Public Health, 2012. [Adaptations of the HDMT Elsewhere](#).

32 Denver Housing Authority, 2012. [South Lincoln](#)



the region's residents.³⁷ The goal of this document was to help raise awareness among a wide range of stakeholders about the benefits and opportunities that a robust public transportation network can create, including how issues as health, housing, jobs and education are integrally linked to transportation. The atlas has also helped to establish a baseline for tracking and measuring equitable outcomes as the Denver region's transit network is built out, and will further build the case for why the Denver region needs to focus on creating and enhancing access to opportunities through affordable transportation options and development oriented around these new transit lines. With respect to health, the Atlas found that many major healthcare centers are located near frequent transit, but smaller healthcare centers are not as well-connected, and there is insufficient data on many local health clinics to understand the services they provide and the people who go to them. The Atlas also reveals that many future transit corridors go through the region's largest food deserts and that there is not enough park space for residents who currently live near stations or will move there in the future.

Goal 7. Develop a “Health in All Policies” Approach to Planning Sustainable Communities

Because of its fundamental link to quality of life, livability and sustainability, health should be weaved into and integrated into all decisionmaking in an ideal world. The Institute of Medicine recently issued a report brief on how to explore and implement Health in All Policies (HIAP) approaches into decisionmaking at all levels of government.³⁸ According to the executive summary, HIAP can be used to:

[A]ct on evidence about the social and environmental factors that influence health but are out of the control of the health sector. The consideration of health in a wide range of public and private sector policymaking may lead both to improvements in population health, and to achieving priority objectives in other sectors such as job creation and educational reform. Non-health policies range from those that affect socioeconomic status and other indirect factors to those that shape individual behaviors more directly. Examples of the former include housing, employment, and educational policies. Policies in these areas may offer incentives for low-cost safe and decent housing, provide a living wage that allows greater financial stability for families, and provide funding for community colleges, which increase educational attainment and income—all of which are linked to better health. Examples of the latter include government agricultural subsidies that influence food choice, as demonstrated by preference for foods of low or no nutritional value, and educational policy that emphasizes certain aspects of the curriculum to the complete detriment of physical activity. The IOM report therefore encourages government and private sector stakeholders to explore and implement intersectoral strategies that take into account how nonhealth sector actions affect the public's health.

In the State of California, a 2010 executive order established a Health in All Policies approach and is encouraging collaboration among various state departments to incorporate health into decisionmaking.³⁹ In Boston, the Healthy Transportation Compact, signed into law in June 2009, requires that all transportation decisions consider public health outcomes, including active transportation modes such as walking and bicycling.⁴⁰ The Governor has set up a joint task force to oversee the implementation of this law. In addition to

³⁷ Mile High Connects, 2012. Denver Regional Equity Atlas..

³⁸ Institute of Medicine, 2011. *For the Public's Health: Revitalizing Law & Policy to Meet New Challenges.*

³⁹ State of California Strategic Growth Council, 2012.

⁴⁰ State of Massachusetts Executive Office of Transportation, MassDOT *Healthy Transportation Compact Receives National Honor.*



promoting inter-agency collaboration, these two examples will also help these states reduce greenhouse gas emissions, increase active transportation, increase the use of health impact assessments in transportation projects, expand Safe Routes to Schools, develop public-private partnerships in furtherance of the compact goals, and develop a set of metrics and outcomes for evaluating progress toward concrete goals.

Conclusion

Planning for healthy, sustainable communities is complex and requires collaboration and coordination across disciplines and sectors. There are many important elements to consider, and many approaches to take. Good health is the backbone of our whole society, and in order to ensure that everyone from all walks of life has the opportunities and resources to thrive, health should become an essential component of every planning exercise and its impacts considered in development decisions. This issue brief provides a high-level overview of some of the goals, tools and strategies to assist sustainable communities grantees with this challenge, and more resources are available below.

Additional Resources on Healthy Communities

- [Transportation.](#)
 - [National Complete Streets Coalition.](#)
 - [PolicyLink, Healthy, Equitable Transportation Policy: Recommendations & Research.](#)
 - [PolicyLink, The Transportation Prescription: Bold New Ideas for Healthy, Equitable Transportation Reform.](#)
 - [Reconnecting America, Are We There Yet? Creating Complete Communities for 21st Century America.](#)
 - [Robert Wood Johnson Foundation, F is for Fat: How Obesity Threatens America's Future.](#)
 - [TransForm, Creating Healthy Regional Transportation Plans.](#)
 - [Trust for Public Land.](#)
 - [U.S. Centers for Disease Control & Prevention, Healthy Places Toolkit.](#)
 - [U.S. Centers for Disease Control & Prevention, Transportation Recommendations.](#)
 - [U.S. Department of Agriculture, Food Environment Atlas.](#)
 - [World Health Organization, 2010. Urban Planning Essential for Public Health.](#)
- [Active Living Research, Research Briefs.](#)
 - [American Public Health Association, Public Health and Transportation Case Studies.](#)
 - [County Health Rankings](#)
 - [Federal Transit Administration, Active Transportation & Your Health.](#)
 - [The Healthy Development Measurement Tool.](#)
 - [The Health Impact Assessment Project.](#)
 - [Kaiser Permanente, Colorado Mile Markers: Recommendations for Measuring Active](#)



Leveraging and Working With Philanthropy

Introduction

As stakeholders in cities and regions of all sizes look to advance goals related to building more sustainable and equitable communities, local and national philanthropy can be an important partner in those efforts. Beyond grant making, foundations can also serve as valuable conveners, helping to bring together the people necessary to work through challenging issues. Foundations can support critical research that provides the needed data and analysis to advance innovative strategies. And, foundations can help enhance public sector capacity in efforts to meaningfully engage diverse community stakeholders in planning activities. This Issue Brief is focused on providing details on the types of roles foundation leaders are employing on a range of projects, including in current HUD Sustainable Communities Regional Planning efforts.

Types of Philanthropy

There are different kinds of philanthropic institutions - also known as Foundations - located throughout the United States. On their Grantspace website, The Foundation Center defines a foundation as follows:

A foundation is a non-governmental entity that is established as a nonprofit corporation or a charitable trust, with a principal purpose of making grants to unrelated organizations, institutions, or individuals for scientific, educational, cultural, religious, or other charitable purposes. This broad definition encompasses two foundation types: private foundations and grantmaking public charities. A private foundation derives its money from a family, an individual, or a corporation... In contrast, a grantmaking public charity (sometimes referred to as a "public foundation") derives its support from diverse sources, which may include foundations, individuals, and government agencies... Most community foundations are grantmaking public

charities.to as a "public foundation") derives its support from diverse sources, which may include foundations, individuals, and government agencies... Most community foundations are grantmaking public charities.¹

Because of their geographic focus and deep ties to particular communities and regions, Community Foundations can be critical partners in advancing outcomes related to more sustainable and equitable community and economic development. The definition for Community Foundation as articulated by the Council of Foundation's Community Foundation Leadership Council is as follows:

A community foundation is a tax-exempt, nonprofit, autonomous, publicly supported, nonsectarian philanthropic institution with a long term goal of building permanent, named component funds established by many separate donors to carry out their charitable interests and for the broad-based charitable interest of and for the benefit of residents of a defined geographic area, typically no larger than a state. (Definition by Council of Foundations, Community Foundation Leadership Council)²

The geographic scope of a foundation and its program priorities is defined by a range of factors, including the type of foundation it is, the wishes of its donors, and the direction provided by its board of directors. The President and staff are responsible for executing the programmatic priorities set by the Board of Directors.

¹ Grant Space Knowledge Base

² Council of Foundations, Definition of "Community Foundation," Adopted by Community Foundation Leadership Team, March 4, 2008



The Roles of Philanthropy

Given the range of activities associated with promoting and implementing more sustainable and equitable cities and regions, there are some effective ways in which funders have demonstrated success in advancing comprehensive and inter-disciplinary goals without duplicating efforts of public sector actors, or other stakeholders from the private or nonprofit sectors. Funder involvement in these issues has become increasingly sophisticated, with funders embracing innovative roles as catalysts for positive change in their regions and communities. So while the categories listed below are fairly broad, the investments and activities funders are engaged in within each category are more nuanced and responsive to the unique context where they are working, and the specific set of stakeholders operating in their region.

Cultivating Champions

Foundations can support key stakeholders and community leaders in their efforts to proactively advance sustainable and equitable community development goals in the near and long-term. Having strong and diverse voices supporting positive policy reform and implementation activities can be critical to success. Champions for these efforts might include nonprofit organizations, public sector leaders, private sector allies, labor, health professionals, or funders themselves.

Convener

Foundations can offer strong leadership by providing a table where stakeholders can come together and build trust, establish productive working relationships, share information and coordinate activities. Building more sustainable and equitable communities requires the involvement of community residents, business leaders and the integration of practitioners from all fields including transportation, housing, land use planning, street design, building, and economic

development. Coordination across local, regional, and state agencies can be crucial to delivering intended outcomes, but often does not occur on its own without focused resources, or identified staff people, to support that work.

Enhancing Public Sector Capacity

Foundations can build public sector capacity to help set the vision, engage stakeholders in a meaningful planning process, and develop implementation strategies. In some cases, this may even involve helping to fund a staff person in a public sector agency, or providing the resources to apply to state or federal grant opportunities that might have otherwise passed communities by. In today's resource and capacity constrained environment, it can be a challenge for public sector leaders to consider deploying innovative strategies to support sustainable and equitable development given many struggle to deliver on the basic day to day functions of their position. Many public sector leaders understand the need to consider these objectives but do not have the time, resources or capacity to deliver on them. Foundations can provide the critical resources to ensure needed capacity is in place to deliver intended outcomes.

Making the Case and Building Buy-In

Foundations can support the research, analysis, messaging and messengers to effectively make the case for particular strategies related to building more sustainable and equitable communities. Foundations can bolster data-driven approaches that align with related goals of political leaders and local constituents, such as economic competitiveness, demographic shifts calling for new approaches, or addressing the obesity epidemic. In communities where sustainable and equitable development outcomes can be hot button issues for whatever reason, public sector leaders, particularly elected officials, need the support provided by advocates, funders, think-tanks, the



business community and others to advance more innovative and transformational policies.

Holding the Vision

Foundations are not beholden to the vagaries of the election cycle or staffing changes at public sector institutions. Given that building more sustainable and equitable communities is often a long term proposition, it's important to have stakeholders in place that know the history and players and that can track progress over time. As longstanding community stewards, foundations have the ability to hold a long-term vision while holding the people and institutions accountable to delivering on that vision. Foundations can also invest in the capacity of community-based and regional nonprofit organizations so they can influence the vision, track it over time, and ensure that people of all incomes stand to benefit from community investments.

Catalyzing Opportunity

By using grants and Program Related Investments (PRI's) along with the roles outlined above, foundations have the ability to help catalyze new markets and new development models in cool, warm or hot market conditions. In most communities across the country, market-based developers alone cannot often deliver the truly exemplary sustainable and equitable development outcomes that communities desire such as the preservation and production of affordable housing in identified opportunity zones or helping to support local businesses during the transit construction phase. Foundations can invest in tools such as structured funds focused on financing the development of affordable housing near public transit, or in providing fresh food in underserved communities.

How to Engage to Philanthropy

There are some key ways in which to get local or national philanthropy engaged in particular efforts. The first step is to have clarity regarding the purpose of the effort you are seeking funding for, the intended outcomes and the beneficiaries of the effort, the partners involved, and the amount of time and resources needed to achieve success in the short and long-term. When approaching a foundation, it is important to understand their programmatic priorities and the type of investments and support they have provided in the past and/or are engaged in currently. Research their grant making timeline and the average size of their grants on their website.

Contact a program officer to discuss how the foundation might be involved. Build a relationship. Don't expect grant funds to start flowing overnight, but identify other ways that the foundation might be involved or help advance efforts. Foundation staff may in fact have suggestions for how to improve the public process, ideas of other organizations to engage and bring in to the effort, they may be able to offer the use of public meeting space for special events. Whether meeting with program staff in person (always the preferred approach), by phone, or if you are submitting a Letter of Inquiry or a proposal through their online grant making portal, it is essential that you make a compelling case as to why the issue or effort you are working on relates to their program goals, and ties directly to the outcomes they are seeking to impact in the community.

The case studies below provide some specific examples of how different foundations have supported innovative efforts related in building more sustainable and livable communities in diverse places across the country.



Case Studies

Inter-jurisdictional Collaboration in the Chicago Region: The Grant Victoria Foundation

The Grand Victoria Foundation along with other funders in the Chicago region provided over \$650,000 over a four year period to pilot an innovative approach to housing and community development involving the Metropolitan Planning Council (MPC), the Metropolitan Mayors Caucus (MMC), Chicago Metropolitan Agency for Planning (CMAP) and several clusters of Chicago suburbs. Grand Victoria Foundation and other foundations supported this inter-jurisdictional collaboration a number of different ways, including providing staffing to two clusters of jurisdictions - one cluster made up of over 20 jurisdictions, and one made up of five jurisdictions - with the purpose of developing an inter-jurisdictional approach to address the foreclosure crisis. This dedicated staff gave the jurisdictions the capacity they needed to implement the federal Neighborhood Stabilization Program (NSP) funds effectively. This added capacity also better positioned the regional partners in their successful application to the HUD Sustainable Communities Regional Planning Grant program. More info here.

Dubuque2.0: The Community Foundation of Greater Dubuque (CFGD) in Iowa

In 2005, the Dubuque City Council launched what was to become the citywide Sustainable Dubuque Initiative to put the city out in front as a sustainability leader. While designed as a citizen-led effort, the policymakers, business and civic leaders who served as the initial supporters of the effort struggled to engage and connect with the broader community or inspire their active involvement. In response to this obstacle, program staff at the Community Foundation for Greater Dubuque (CFGD) developed a strategy for

community engagement they called Dubuque 2.0. Foundation staff assembled a steering committee of key community stakeholders, they forged partnerships with nearly two dozen local organizations, and they held a series of “community café” forums where residents were invited to share their priorities and needs related to environmental change. The new Dubuque 2.0 website provided an interactive Web portal that proved to be a robust information hub for the community and served to enhance the citywide work already underway. The Community Foundation provided office and staff support to augment Dubuque 2.0 staff and volunteers, and they facilitated dialogue among key stakeholders. The Community Foundation initially committed \$50,000 of its unrestricted funds to the effort, while leveraging additional resources from other community business partners like Alliant Energy, Mystique Casino and the Dubuque Racing Association and later the local paper, and the Iowa Office of Energy Independence. The Knight Foundation Community Information Challenge (KCIC) provided matching funding of \$205,000. Near term results have included greater access to and sharing of sustainability information across the city, early signs of changing behaviors relating to environmental sustainability and an improved approach to community engagement among public sectors, which will pay dividends now and into the future.

Redline Community Compact: Funding Consortium in Baltimore

In Baltimore, funders long collaborating on neighborhood development saw opportunity for neighborhood residents in a proposed regional light rail investment, the Baltimore Red Line. Beginning with grants for asset mapping and community planning in West Baltimore, Baltimore Neighborhood Collaborative funders partnered over several years to strengthen the community’s capacity to organize and determine what it wanted from a light rail line.



Grants supported a regional job analysis, community-focused transit alignment assessments, and a “Transit Around the Nation” tour for community and public leaders. The tour sparked discussion of ways to ensure that community residents would benefit directly from the transit investments, eventually resulting in a community agreement (compact). The Red Line Community Compact was initiated by the Mayor’s office in 2008, in partnership with a range of public agency, community, business, advocacy, and philanthropic leaders to ensure that the planned Red Line light rail would maximize benefits for existing residents of neighboring communities including West Baltimore. Through this process, this multifaceted group came to agreement on key goals for the Red Line, including a local hire policy during transit construction, coordination with workforce development agencies, genuine engagement of neighborhood groups in station design and development, and support of local businesses to minimize impacts of light rail construction. Local residents and neighborhood leaders have become significant partners in the process, and speak on behalf of the light rail project. www.gobaltimoredline.com.

rail network scheduled to double in size over the next 10-40 years, LAHD has also more recently begun to study the intersection of at-risk housing and transit investments through this initiative.

Preserving Green and Affordable Housing Near Transit, Los Angeles, California: MacArthur Foundation

Over the last three years, the MacArthur Foundation has been working with the City of Los Angeles Housing Department (LAHD), and a handful of other cities, to expand their capacity to support affordable housing preservation and green retrofit activities. This initiative has enabled LAHD to expand its internal capabilities to incorporate sustainability and preservation into existing programs, and to better track the status of vulnerable and at-risk affordable housing units. Such efforts have moved the LAHD towards more proactive initiatives to preserve affordable housing, and retrofit existing housing stock with energy efficient improvements. With the regional



Introduction to Cargo-oriented Development

Introduction

The Story of Freight, Place, and the Economy

Prior to the rise of the automobile in the second half of the 20th century, many American homes and businesses were located in walkable, transit-served communities. Manufacturers reaped the benefits of easy access to railroads and waterways, and compact, affordable, working-class neighborhoods sprung up around them. Some industrial activities caused grave damage to the health of the public and the environment, but the linkage between housing, jobs, and infrastructure also gave workers an opportunity to get to work by foot or by transit, save money, and climb the social ladder. It can deliver the same basic results today.

During the last two generations, however, industrial jobs were exported to developing countries, and highway development opened up cheap land in sprawling new exurbs, draining many communities of businesses, residents, and tax revenues. Manufacturing districts struggled with vacancies and environmental liabilities. As economic decline accelerated, core infrastructure remained, anchoring city centers, downtowns, and industrial areas.

Over the last decade and a half, rising energy prices and globalization have spurred renewed investment in multimodal transportation, breathed new life into railroads and waterways, and given rise to new land use patterns. One result has been **cargo-oriented development**, an innovative transportation and land use planning concept that integrates freight, economic development, workforce development, and environmental programs in existing communities. COD brings manufacturing and logistics businesses together near railroads, waterways, truck routes, and

a skilled workforce, which reduces logistics costs and helps keep firms competitive. In the bargain, there is tremendous potential to curb suburban sprawl, streamline freight movements, and reduce greenhouse emissions. This issue brief provides a “how to” for COD initiatives, from an overview of the shipping trends that make it possible to strategies that communities can take to capture more job growth around their freight hubs.

Globalization Breathing New Life into Place-Based Assets

Global trends in manufacturing and logistics have shifted emphasis from trucks to an intermodal freight transportation system. As shippers aim to make deliveries more reliably, save energy, and avoid congestion, they have looked at railroads, waterways, and airports as part of the solution – and these are often assets anchored in the heart of many older communities.

For the last two decades businesses have been moving away from traditional “manufacture-to-supply” or inventory-based logistics and toward “manufacture-to-order” or replenishment-based logistics. Widely known as **“just-in-time”** (JIT) manufacturing or



Figure 1: A single gallon of fuel can move a ton of freight more than four hundred miles.



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distribution, this strategy keeps overhead low by replacing big inventories with frequent shipments to keep up with changes in demand. JIT shipping requires reliability of delivery, so transportation networks must handle vast quantities of goods movements without disruptions or delays.

When energy was cheap and abundant, trucks were seen as the best answer for JIT delivery needs. However, as the cost of fuel has skyrocketed, the energy efficiency of other modes has become more attractive. A gallon of fuel can transport 155 ton-miles by truck, compared to 413 ton-miles by rail and up to 576 ton-miles by inland barge. If just 10% of long-distance cargo currently transported by truck switched to rail, the United States would save over one billion gallons of fuel per year and reduce GHG emissions by roughly 12 million tons. As fuel costs continue to rise, railroads and waterways will deliver increasingly big savings to the bottom line of shippers.

Truckers have also faced mounting traffic congestion. In some major metropolitan areas, trucks on the aging and overwhelmed Interstate Highway System travel as slowly as 20 mph on average. The Federal Highway Administration (FHWA) projects that heavy peak period congestion will only get worse. By 2040 intense traffic conditions will increase from 11% to 37% of the system and slow trucks on 21,000 miles of roadways. Overreliance on trucks has strained the national freight network and the mode cannot meet demands for JIT shipping all on its own.

In response to these challenges, the freight industry has expanded beyond the truck towards a modern **intermodal freight system**. Today high-value cargo movements of over 500 miles move internationally by ship, long distances inland by rail, and the last leg of the journey by truck, often times never even leaving their container. Rapid gains in the efficiency and reliability of the rail network have made it possible to provide customers with the flexibility of

trucks and the cost savings of ships and railroads. The major Class I railroads have risen to meet this market opportunity and spent \$12 billion to upgrade and expand the network in 2012, according to the Association of American Railroads. Intermodal has been the fastest growing mode of freight movement in America for the last fifteen years, and the Federal Highway Administration expects intermodal freight value to grow another 220% over the next thirty years, much faster than any individual mode on its own.

Rail, water, truck, and air infrastructure come together in **strategic hubs**, often places that grew up around railroads and waterways in the first place and provide the setting for COD today. Rail yards and water ports built a century ago often have easy access to multiple transportation networks and supply chain of manufacturing companies, logistics providers and IT services. According to a 2013 review of real estate trends by the Urban Land Institute, investors see industrial land near major distribution hubs as one of the best bets for development in 2013 in regions as diverse as Chicago, Dallas, Kansas City, and Columbus. Infill properties along rail sidings and barge landings can also see COD of a more modest scale. No matter the size of the opportunity, compact land use patterns help trucks making final connections minimize mileage, fuel costs, and air quality impacts. Ready access to a large labor pool can help fulfill the transportation, logistics and manufacturing industries easily find the workforce they need. COD helps communities take advantage of the growing economic importance of their strategic freight assets and encourage new investments that benefit the entire region.



Capturing New Growth from Your Freight Infrastructure

Valuable sites with ready access to freight infrastructure often sit polluted, underutilized, or undeveloped. Although potential end users would find these sites valuable, their characteristics often create an uncertain predevelopment timeline and carrying costs for private developers.

Communities can use an increasingly familiar toolbox of programs and resources to move COD locations through the predevelopment process. The major components include:

Understanding Capacity.

Many communities and regions already possess a few land use, transportation, and economic development programs that could be refocused around freight hubs to support COD. It can be beneficial for a community to inventory their immediate staff and programmatic capacity. For example, what GIS data exists for brownfields, land ownership, and industrial firms around yards and ports? Who on staff can build relationships with owners, developers, freight carriers, potential manufacturers, and suppliers? Are there area-wide brownfields grants already in hand and, if not, who can write grants for them? A community that answers questions like these can better unify their existing competencies around their freight assets.

Assembling Land. Land near rail, water, and

intermodal freight assets have often been passed from one owner to the next over decades. This can leave them oddly configured and owned by many different individuals and companies. Because negotiations with these property owners can be uncertain and land improvement can be expensive,

sites with high strategic value can sit undeveloped. Communities can overcome that uncertainty by assembling land themselves. Land banking mechanisms vary in their sophistication. Large cities like Cleveland and Chicago bank vacant properties that have been reacquired from delinquent owners. The Genesee County, Michigan and Cuyahoga County, Ohio land banks allow for acquisition across municipal boundaries and improvements to prevent depreciation and attract private investment.

Remediating Land. Owners concerned about legacy environmental liabilities may not even commit to a Phase I environmental inspection, the first step toward accessing federal remediation dollars. These assessments have a short shelf life unless they are followed by a Phase II report to locate specific contaminants for remediation. The sequence of assessments and clean-up costs creates an additional layer of risk and uncertainty in the redevelopment process. The U.S. Environmental Protection Agency offers a suite of programs that can help communities overcome these barriers regionally, including grants for Phase I and Phase II assessments as well as a



Figure 2: COD pipeline to Jobs and wealth



revolving loan fund for clean-up. A fledgling COD initiative should dedicate staff capacity to apply for these competitive resources, administer them, and monitor sites as they move through the Phase I and Phase II process.

Improving Intermodal Connectors. The Federal Highway Administration identifies Intermodal Connectors in all fifty states to help trucks at rail and water facilities identify routes to the interstate highway system for deliveries and medium distance shipping. Despite their critical importance as connectors in the global supply chain, USDOT does not always provide sustained capital funding for them, so the responsibility of their resurfacing, repair, and improvement can fall to the local level. Heavy tractor trailers weigh as much as 80,000 pounds each and create exponentially more wear and tear on roads than personal vehicles, these locally maintained connections can quickly fall into disrepair without a regional and state commitment to maintain them. Though short, these multimodal links may require innovative layers of capital to equip them for heavy trucks. As one example, the Port of Corpus Christi utilized its own revenue, as well as state and federal dollars, to finance a \$55 million, 12 mile intermodal link that improved container access to over 1000 acres of previously underutilized land. Communities can find funding for Intermodal Connectors through regionally allocated federal investments like the Federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ), credit enhancement guarantees like TIFIA and the Railroad Rehabilitation and Improvement Financing (RRIF) program, and even Community Development Block Grants.

Preparing a Ready Workforce. COD communities can have an underutilized workforce ready for jobs at companies as diverse as railroads, warehouses, transload operations, suppliers of

equipment, and manufacturers that operate logistics and distribution in-house. These employers often seek workers with a high school diploma but no college degree. It is important that residents have the skills to fill these jobs as CODs come online. Community colleges and workforce training centers sometimes offer curricula for one or more of these. Coordinating these often overlapping efforts can help workforce developers tailor curricula to the needs of incoming logistics employers and ensures a ready body of workers for a firm expanding or considering a move into the community.



Figure 3: Mi-Jack Products has developed a freight yard management system that greatly improves the efficiency of goods transfers, reduces truck idling, eliminates emissions from cranes, and allows for more compact freight yards in established industrial areas.

Source: Mi-Jack Products, Inc.

Investing in Clean Technology. At the same time that COD saves fuel and improves regional air quality through energy efficient movement of goods and use of land, it can degrade the local environment by concentrating freight activity. Trucks, railroads, and barges can generate an immense amount of exhaust. Clean technology helps to mitigate adverse impacts on air quality and substantially reduce liabilities from intermodal operations in densely populated neighborhoods. For example, the Port of Los Angeles began incentivizing ocean



freighters in May 2012 to utilize cleaner burning technology by publically scoring them according to an Environmental Ship Index and awarding incentives of more than \$5,000 per ship call depending on their score and participation in demonstration projects. The Port has also banned trucks with high levels of air emissions. Clean transportation infrastructure projects are eligible for CMAQ funding.

Building Support by Telling Your COD Story

A COD initiative aligns people, programs, and institutional capacity around a shared economic vision. Communicating that vision is an important strategy for its success – from stakeholders who make regional infrastructure decisions, to developers that could bring CODs online, to the railroads that facilitate and service CODs, and finally to communities managing the increased freight congestion that CODs can create. Regions with freight activity may have technical expertise on hand, but it is just as important to communicate to non-technical audiences, such as elected officials, investors, and the community at large.

Know your infrastructure. Freight links provide a key shipping or economic advantage relative to the nation as a whole. The Canadian National Gateway Intermodal Yard provides Harvey, Illinois with a rapid container link to East Asia through a deep water port in Prince Rupert, Canada. The Port of Baltimore is only one of two on the East Coast already dredged for ships soon expected to come through the Panama Canal. Logistics and manufacturing firms locate facilities because of their unique access to foreign and domestic markets. It is important to understand how their infrastructure serves as a critical logistic link and the level to which a community currently captures freight movement in job activity, before sharing that story with elected officials, the private sector, and the

community. Similarly, the regional transit system will connect CODs with nearby transit, which may also foster their own development opportunities or transit-oriented developments (TODs).

Build regional consensus. Legacy freight assets are place based, so without a strong sense of the regional benefits, investment in transportation and economic development around them could create a sense of “winners and losers”. Federal resources that can fund a COD strategy, such as the CMAQ program, are frequently allocated by MPOs, which are more likely to support investments if they understand how COD improves the vitality of the region as a whole. CODs create a few hundred jobs within the confines of a freight facility in a single town, but the real benefits come indirectly when a supply chain of logistics and manufacturing firms supports thousands of jobs spanning across municipal boundaries. Planners can make this case for COD by modeling job impacts and communicating the unique role of a facility within the national and international economy.



Figure 4: Every freight asset can bring a unique competitive advantage. The Port of Cleveland, for example, handles bulk materials from as far west as Duluth and as far east as Halifax. The city’s primary metal manufacturers could use it to ship bulky oversized components like wind turbines to markets like the Dakotas.



Consult industrial developers. Recently, large logistics and distribution facilities are being built on the urban periphery, where land is cheap and site control costs are low. Few comparable projects exist in infill locations, so developers can conclude that they are simply not profitable. Case studies on CODs and infill development from other regions can help demonstrate how infill projects can be profitable for everybody involved. An economic development staff person tasked with building these relationships and “speaking the language” can complement the technical expertise provided by freight planners and economic impact modelers.

Engage railroads and other freight handlers.

Like any private businesses, the Class I railroads operate by a profit motive, to move freight as efficiently as possible. Planners and advocates sometimes find them difficult to engage, but they have been willing and active redevelopment partners when the economic benefits in terms of increased freight activity and decreased congestion are clear. In the Chicago region, all six Class I railroads came together with Amtrak, the Illinois Department of Transportation, and USDOT to develop CREATE, a plan to enhance freight service, the transit system, and community connectivity by improving critical grade separations, flyovers, and signal and switching equipment. In the Kansas City region, multiple Class I railroads directly invest grant money in the KC SmartPort to achieve a better business and development environment for logistics and distribution. And states like Ohio have conducted freight planning and provide capital assistance to help railroads acquire, preserve, and rehabilitate rights of way. These initiatives provide a regular forum for railroads and planners to convene, speak in the language of shared economic interests, and generate public-private commitments to major capital projects.

Understand different place types. There can be

conflicts between the retention of industrial land uses and the expansion of residential ones, particularly in communities where freight and transit service share rights-of-way. Buildings in some historic industrial areas may be multi-story, brick facilities out of favor by most manufacturing and logistics firms but with promising adaptive re-use potential as apartments, condominiums, or office space. Others may be single story districts oriented to trucks or neighborhoods with heavy manufacturing facilities. Potential conflicts can be mitigated through thoughtful land use planning designations, such as a special zoning overlay that creates a transition buffer between uses, construction standards for soundproofing and lightproofing, and/or lot configuration restrictions. As one example, in 1988 the City of Chicago designated a transit-served manufacturing area near the upper income Lincoln Park neighborhood as a Planned Manufacturing District while allowing retail as a permitted use before transitioning to residential zoning. Trucks picking up product at industrial firms and making deliveries at stores share the same access roads and rights-of-way. The PMD saved key riverfront parcels from residential conversion while the adjacent retail district became a top shopping destination in the City’s North Side.

Listen to the public. To community members, the job creation benefits of enhanced freight mobility may be abstract and less immediately understood, compared to the potential for deteriorated air quality, increased congestion, and reduced traffic safety. For freight and economic development planners, meanwhile, the regional benefits may seem so significant that the impact of a COD on the quality of life of an individual neighborhood could be overlooked. A two way conversation is essential. Planners should avoid technical language and complicated statistics, and instead speak in terms of examples, anecdotes, and case studies to help community members visualize the benefits of COD,



and be open to community ideas for improvements needed to mitigate externalities. For example, inadequate parking can result in trucks idling and parking along shoulders and ramps, worsening air quality, and lowering property values. However, a dedicated parking area for trucks can be relatively inexpensive to deliver if considered in the initial land use planning process.

Case Studies

The Green TIME Zone, Cook County, IL

Forty-two suburban municipalities south of the city of Chicago matured around the railroads. By the 1970s, however, the area of southern Cook County known as the Southland had begun a steady decline due to a combination of disinvestment, heavy manufacturing losses, and public policy favoring automobile transportation and sprawl. Today, railroads make the Southland one of the few places in the country where a shipper or manufacturer can access all six Class I railroads to connect to markets on the East and West Coasts, Canada, and Mexico, and points beyond. Union Pacific and Canadian National pumped considerable capital into upgrading their legacy yards to a rail-to-truck capacity, with CN's National Gateway Intermodal yard in Harvey providing North America's fastest connection to Prince Rupert, BC and markets in East Asia. However, several decades of deindustrialization left much of the land near these facilities polluted and fragmented. This limited the ability of south suburban towns to capture economic benefit from their shared connection to the global economy.

With technical assistance from the Center for Neighborhood Technology, the South Suburban Mayors & Managers Association launched the Green TIME (Transit, Intermodal, Manufacturing & Environment) Zone strategy to capture unrealized value from these freight yards and nearby commuter

stations. To facilitate COD development, the Green TIME Zone aimed to build a pipeline of "shovel ready" properties adjacent to freight assets and to invest in strategic capital improvements to efficiently move containers to and from those properties. SSMMA's investments began with existing USEPA brownfield grants in hand: a \$1 million revolving loan fund, a \$2.6 million grant for clean-up of two sites, and a \$1 million grant for area-wide assessment of new sites. After SSMMA reoriented the program to COD development, the fund awarded the balance to two sites in Blue Island and Harvey. An impressed USEPA then awarded SSMMA an additional million for further remediation activities. SSMMA has since created a GIS Atlas to inventory additional brownfields, position them for clean-up, and promote them to developers.

The Green TIME Zone branding has attracted public investors in housing, transportation, and economic development. Most significantly, HUD awarded SSMMA a \$2.4 million Community Challenge grant to capitalize a land bank and loan fund that will cover predevelopment costs like land assembly. After partnering with SSMMA on several high scoring but unsuccessful TIGER applications for a short intermodal connector near the Gateway yard, the Cook County Department of Highways chose to improve it independent of federal support. The Green TIME Zone story proved critical in attracting all of these resources, as it communicated the linkages between freight transportation, the economy, and environmental benefit to agencies typically focused with investing in one but not the others.

The Green TIME Zone framework also convinced SSMMA's 42 member municipalities and their mayors of the critical economic importance of their infrastructure and the need to work regionally to improve it. Through an existing Transportation Committee at SSMMA that allocates transportation



dollars, member mayors discussed freight mobility issues and agreed to their importance because of an industrial and logistics supply chain that does not stop at town boundaries. This consensus built the credibility and trust that SSMMA needed to expand its efforts and build its COD capacity.

CSX Mount Clare Yard, Baltimore, MD

The Port of Baltimore, the closest major US port to the Midwest, has been undertaking strategic investments to capitalize on the upcoming expansion of the Panama Canal in 2015. New super-sized “post-panamax” ships from Asia will be able to bypass the Port of Los Angeles/Long Beach and head directly to the East Coast. The Maryland Port Administration and its private partner Ports America Chesapeake have worked together to upgrade infrastructure, prepare the port to handle these ships, and expand the terminal to accommodate supersized containers and give Baltimore increased access to points in East Asia and beyond.

As infrastructure upgrades occur at the port, CSX sought a new rail-to-truck intermodal facility to replace an obsolete one located at the Seagirt Marine terminal. The current site is problematic because trains departing from the yard must pass through the 100-year old Howard Street tunnel, which cannot accommodate double-stacked container cars and is sandwiched between utility and subway lines that would make an upgrade very expensive. CSX decided to partner with the state to build a new intermodal facility south of the tunnel. Here containers unloaded at the port could be transported through the tunnel to the new yard, where they would then be transferred to double-stack trains heading toward the Midwest.

CSX initially identified a few sites for this yard in suburban Baltimore, where local officials declined the investment due to zoning and community concerns over congestion and pollution. However, City of

Baltimore Mayor Stephanie Rawlings-Blake saw the strategic importance of the yard for the economy of the city and region and urged CSX to redirect its site search to potential locations within the city limits. The choice fell on Mount Clare Yard, an active CSX rail yard in the southwestern part of the city. The yard was a legacy facility primarily used to store coal coming from West Virginia and smaller than the suburban locations CSX initially planned.

Public and private investments have made Mount Clare Yard a viable intermodal site and positioned Baltimore to capture projected freight increases. CSX will purchase high-efficiency electrical cranes that will allow a capacity of 90,000 container lifts per year on an infill footprint, while substantially reducing the impact of emissions and air pollution on the surrounding community. CSX and the city also listened to community concerns regarding truck traffic. CSX will move the entrance to the new facility to minimize residential disruptions, and the Maryland Department of Transportation is improving intermodal connectors to keep trucks off of residential streets. These improvements minimized the externalities to the surrounding community. City and state elected officials also support the relocation of the facility.

KC SmartPort, Kansas City, MO/KS

From its early days as a trading post to its current role as an intermediary destination along the Mexico-USA-Canada freight corridor, Kansas City has been a strategic hub where water, rail, and interstate networks all intersect. The region is served by five Class I railroads, four major interstates, three cargo airports, and the Missouri river, as well as six intermodal and three logistics parks either active or under development. After the introduction of NAFTA spurred an increase in international freight movement, the Greater Kansas City Chamber of Commerce, the Mid-America Regional Council, and the Kansas



City Area Development Council saw the need for a coordinated freight strategy to maximize local growth in transportation and logistics. KC SmartPort was born from these efforts.

Encompassing a 90-mile radius around Kansas City that includes 18 counties across state lines, KC SmartPort creates a unified brand for the numerous freight assets in the region, which span multiple modes and public and private owners, so as to attract developers, investors, and end users to “shovel ready” development sites in their area. The organization manages the “Site Location Center”, an online data portal that allows users to map out regional freight infrastructure, trade corridors, and available land. Kansas City pioneered the use of distributed Foreign Trade Zones (FTZs), areas considered outside the customs jurisdiction of a country where imported cargo can be placed in a duty and tax free environment and transformed, with regulatory and fiscal advantages for manufacturers. Other initiatives include the development of the Trade Data Exchange, a global point-to-point transportation management system, and a workforce development partnership with local community colleges.

Competing Class I railroads and private businesses fund KC SmartPort even though they compete in daily operations. All partners believe in the importance of the initiative for the economic development of their own region, and collaborate successfully to implement common strategies. Investors are actively engaged in projects and their retention rate is very high. For example, KCS Railroad was the first private investor and continues to be a supporter after 13 years.

Since its launch, KC SmartPort has attracted several distribution and logistics companies to the Kansas City region, creating thousands of new jobs despite a challenging economic environment. In 2012 the region attracted 11 new companies to occupy 1.4

million sq. ft. of space, create 500 new jobs, and add \$18 million in new payroll.

More Information

- Chicago’s South Suburbs: Smart Growth in Older Communities. Center for Neighborhood Technology, March 9, 2011.
- Chicago Southland’s Green TIME Zone, November 18, 2011. Center for Neighborhood Technology, November 18, 2011.
- Baltimore-Washington Rail Intermodal Facility.
- Kansas City SmartPort.
- Freight Facts and Figures 2012. Federal Highway Administration, 2012.



Unlocking MPO Funding Tools to Support Sustainability

Introduction

In many regions, metropolitan planning organizations (MPOs) are emerging as important partners to help local communities further sustainability, whether through the availability of funding for competitive grant programs or the implementation of sustainability plans. MPOs play a critical role in regional transportation planning and provide resources to support corridor and local planning at transit stations. With their regional focus, MPOs can set the table for addressing issues that cross jurisdictional boundaries. In addition, despite the many differences that exist between MPOs across the country, all have responsibility for annually programming millions of dollars in federal transportation funds. This authority provides an opportunity to engage MPOs as partners in planning, pre-development, and capital support and to better understand the role they can play in implementing equitable transit-oriented development (TOD).

Federal surface transportation programs provide funding and planning authority to support equitable TOD, bicycle and pedestrian investments, and other plans and capital investments to create safe, complete streets and integrated transportation systems that support regional environmental and housing needs. This issue brief pulls from a forthcoming publication by MZ Strategies, LLC for Enterprise Community Partners and Mile High Connects, through funding from the Ford Foundation, to examine the potential for current federal transportation programs to provide equitable TOD financing. It also includes research from a Summary of National Best Practices on Competitive Grant Funds prepared for the Transportation For America/Rockefeller MAP-21 Implementation grantees by Reconnecting America.

Using Federal Funds to Support Equitable TOD

TOD provides critically-needed public transit options for low-income residents to affordably access employment, education, and health care. Equitable TOD refers to livable, mixed-use neighborhoods near transit, providing housing for all income levels. A growing number of Americans seek to live in walkable, mixed-use, transit-accessible neighborhoods, increasing land values in areas with already limited supply of developments close to transit. A shortage of equitable TOD profoundly affects the poor, who increasingly live in transit-inaccessible communities and face a higher transportation cost-burden than city residents with greater transit service.

Building equitable TOD requires funding for planning and pre-development activities, including land assembly and site remediation, and funding for infrastructure, transit, and development costs. While the need for equitable TOD is increasing, available federal funds have experienced dramatic cuts in both transit and housing. Not only is the main source of federal transportation funding, the gas tax, rapidly declining in buying power; in many states, non-highway projects cannot utilize these funds. The current federal surface transportation statute, “Moving Ahead for Progress in the 21st Century” (Public Law 112-141, commonly referred to as MAP-21), maintains previous transportation funding levels and amends the federal laws codified in United States Code 23 and 49.¹ Congress annually authorized approximately \$10.6 billion for transit in each of the

¹ The Moving Ahead for Progress in the 21st Century (MAP-21) law authorizes funding for highways and transit programs through Fiscal Year 2014. Title 49 includes the transit portions of the bill, while Title 23 covers the highway portions.



bill’s two years, ending September 30, 2014. However, significant cuts resulting from sequestration and congressional budget battles further reduced those levels. For instance, the Capital Investment Grant program, which funds new transit lines and core capacity improvements for older transit systems, was cut by \$100 million in Fiscal Year 2013.

Consequently, utilizing these funds to implement sustainability plans requires taking full advantage of existing authority, eligibility, and flexibility provided in MAP-21 while making a strong case for the transportation benefits of locating affordable housing and development near transit.

MAP-21 provides several funding opportunities for equitable TOD and other sustainability elements:

- Under Title 23, the new Transportation Alternatives Program provides funding for a variety of driving alternatives, including improvements to public transportation accessibility and community improvement activities.
- The Surface Transportation Program (STP) reinforces the ability for MPOs and states to transfer surface transportation funds to transit projects.
- The Congestion Mitigation and Air Quality (CMAQ) Program can fund up to three years of transit operating assistance, as well as projects reducing travel demand including TOD.
- Used in recent years for transit projects with development components, the Transportation Infrastructure Financing and Innovation Act increased

Table 1. Sustainability Goals

Sustainability Goals of Competitive Grant Programs	
Environmental Sustainability	<p>Programs prioritizing environmental sustainability should incentivize development in ways that minimize impacts on the natural environment, conserve rural lands, and encourage use of alternative modes of travel.</p> <p>Program criteria that supports environmental sustainability include:</p> <ul style="list-style-type: none"> • allocating funding to locations that are regional priority areas for growth and development, • rewarding projects that attempt to pursue sustainable development techniques such as infill development and TOD, and • establishing design standards reflecting the needs of pedestrians, cyclists, and public transit. <p>Programs such as the San Francisco Bay Area’s One Bay Area Grant program, Dallas-Ft. Worth’s Sustainable Development Funding Program, and Atlanta’s Livable Communities Program target funds to areas designated for growth and development based upon their locations and accessibility via transit.</p>
Economic Sustainability	<p>Programs prioritizing economic sustainability should seek to create and enhance opportunities for local economic development and job creation.</p> <p>Program criteria that support economic sustainability include:</p> <ul style="list-style-type: none"> • incentivizing development in areas with high concentrations of unemployment, and • rewarding project proposals seeking to make use of public/ private partnerships. <p>Lancaster’s Smart Growth Transportation program specifies as a weighted criterion that proposals “encourages public-private partnerships to extend the reach of public dollars and leverage private development in designated growth areas.”</p>
Social Sustainability	<p>Programs prioritizing social sustainability should incentivize redevelopment in communities that have experienced disinvestment and encourage more equitable access to transit, employment, and housing in these socially and economically disadvantaged areas.</p> <p>Program criteria that support social sustainability include:</p> <ul style="list-style-type: none"> • requiring that projects be located in areas defined as disinvestment areas, environmental justice areas, or communities of concern, and • rewarding points for projects that seek to engage within local communities. <p>Philadelphia’s Transportation and Community Development Initiative designates target areas for investment in “Core Cities, Developed Communities, and socially or economically disadvantaged areas” that are identified in a regional environmental justice study.¹</p>

¹ <http://www.dvrpc.org/reports/08017.pdf>

Source: *Reconnecting America, Summary of National Best Practices on Competitive Grant Funds, Fall 2013.*



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significantly in MAP-21 and provides financing through credit assistance.

- The Title 49 Capital Investment Grant Program includes affordable housing evaluation measures for proposed new transit projects.
- Further, the Federal Transit Administration (FTA) March 2013 circular on joint development provides a vehicle for building equitable TOD projects in transit agency properties.

Competitive Grant Programs at MPOs

Using the federal funding opportunities described above, some MPOs formally administer livability or competitive grant programs to further local or regional goals of sustainable development and TOD. Programs such as the Livable Centers Initiative at the Atlanta Regional Commission or the Transportation for Livable Communities Program (TLC) at the Metropolitan Transportation Commission in California demonstrate instances where capital grants are offered for planning, infrastructure, or technical assistance. Competitive grant funding programs serve as an invaluable tool for MPOs looking to promote

livability on a region-wide basis. By requiring eligible local level recipients to compete for funds based on programmatic standards – be they environmental, social or economic, MPOs are better able to not only create but also implement and see through regional long-term goals. This approach can push localities to take deeper interest in responding to affordable housing needs, conserving habitat and resource lands, and developing livable communities more integrated with transportation, infrastructure and land use decisions. Table 1 describes some common sustainability goals of competitive grant programs.

Creating Innovative and Flexible Federal Funding Sources

In general, competitive grant programs use federal funds either from the Congestion Mitigation and Air Quality (CMAQ) program or the Surface Transportation Program (STP). Funding through the CMAQ and STP sources are flexible, but only to a certain extent and often will not allow for specific types of development projects as described in Table 2. In response, some MPOs have swapped federal

Table 2: STP vs. CMAQ

Funding Source	Program Purpose	Highlighted Differences
Surface Transportation Program (STP)	“The Surface Transportation Program (STP) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.” ²	STP funds may be used to support a variety of different types of projects so long as they relate to improving the performance of mobility infrastructure.
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	“The CMAQ program is continued in MAP-21 to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).” ³	CMAQ funds may be used for transportation projects so long as the project is “...likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution...”

Source: Reconnecting America, Summary of National Best Practices on Competitive Grant Funds, Fall 2013.

2. FHWA “MAP-21 – Fact Sheets – Surface Transportation Program
3. FHWA “MAP-21 – Fact Sheets – Congestion Mitigation and Air Quality Improvement Program”



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funds with those from local sources that allow them the ability grant funding to project types that may not explicitly fall into the realms of federal funds. In the case of North Texas Council of Governments and the Metropolitan Transit Commission, federal funds were “swapped” between the MPOs and the local transit agencies and jurisdictions, thus enabling land-banking and affordable housing projects to be funded by the programs. Additional funding sources are typically specific to the region with regard to its existing transportation and land use policy. Some programs, including the NCTCOG Sustainable Development Funding Program, use regional toll road proceeds to supplement the CMAQ and STP funds. Other programs, including the Atlanta Regional Council’s Livable Centers Initiative, may utilize municipal tax incentives and schemes, including tax allocation districts and a municipal quality of life bond program.

Moving Beyond MAP-21

Partnering with communities and developers, MPOs play an increasingly important role in addressing equitable TOD challenges, including how to prioritize investments that benefit low-income households and how to create greater transportation choices for all regional residents and workers. MPOs, states, advocates, and transit agencies can support equitable TOD through five policy recommendations:

1. Recognize TOD as a transportation purpose through administrative or legislative actions
2. Develop regional performance measures in support of TOD investment
3. Utilize existing MPO and state authority to flex and swap eligible program funding
4. Establish specific funding tools to support TOD planning, acquisition and implementation
5. Exercise maximum use of joint development opportunities

Achieving progress on equitable TOD implementation will require private, not-for-profit and public sector partners to work at all levels of government. The good news is progress is happening in a growing number of regions – from New York to Georgia to Texas, Minnesota and California. However, the funding complexity and high cost of providing equitable TOD will require even greater innovation, flexibility and partnership by MPOs to meet the growing market pressures occurring in metropolitan areas across the country.

Resources

- Zimmerman, Mariia. “Unlocking MAP-21’s Potential to Fund Equitable Transit-Oriented Development,” (Forthcoming, Fall 2013), Enterprise Community Partners.
- Association of Metropolitan Planning Organizations: [Integrating Smart Growth Principles into Metropolitan Planning Process](#)
- Federal Highway Administration [Metropolitan Planning information](#)
- Atlanta Regional Commissions’ [Livable Centers Initiative](#)
- Broward County MPO’s [Livability Planning](#)
- Twin Cities Metropolitan Council [Livable Communities Program](#)
- “Summary of National Best Practices on Competitive Grant Funding,” (Forthcoming Fall 2013), Reconnecting America.
- [Infrastructure Financing Options for Transit-Oriented Development](#), Environmental Protection Agency.
- [Transit-Oriented Development in the States National Conference of State Legislatures.](#)
- [TOD Tools for Metropolitan Planning Organizations](#), Center for Transit-Oriented Development.
- [2010 Inventory of State, Regional and Local TOD Programs](#), Reconnecting America



Connecting Jobs and Workforce Development to Transit

Introduction

Most of the emphasis to date on the benefits of transit and transit-oriented development (TOD) has been around housing—building compact, mixed-use, mixed-income developments near transit, with shops and services nearby and a variety of transportation choices. Yet economic and workforce development are just as important to incorporate into transit-oriented communities. People who can take transit to work often spend less on transportation costs, saving them money to spend on other things. Employers also benefit by locating near transit in a variety of ways, from gaining access to a larger labor pool, saving money on things like parking and health care and greater convenience to clients and customers. Workforce training providers that locate near transit give potential workers greater access to their services and also lower the cost of taking such training courses in order to find a job. This is especially important for lower skill workers, who often need training beyond high school to get a good paying job but often do not have the information or resources to get these jobs or access the training for them.

This issue brief provides an overview of the benefits of employers and workforce training providers locating near transit for and addresses the barriers that often prevent them from choosing a transit-oriented location. The first part outlines the benefits of connecting workers to jobs via transit for employers, local government, transit agencies and the workers themselves. The issue brief then outlines the major barriers that workers and employers face in taking transit to work and choosing a transit-oriented location, respectively. The next section provides a roadmap for local practitioners to address these barriers and begin to attract, retain and grow businesses near transit stations. Case studies of transit-

oriented jobs and workforce development initiatives are also included.

The Benefits of Connecting Jobs and Transit

The following are some key findings from the research on the benefits of connecting jobs and transit.

There are economic benefits for workers, businesses and the neighborhoods themselves from transit access. The benefits of connecting jobs and transit to the business community, workers, and the economy include:

- ***Placemaking.*** Businesses that locate near transit are closer to other businesses, including related businesses;¹ closer to shops & services that workers can access before, during or after work^{2,3,4} and within walking distance of many other places, allowing workers to get to appointments or do errands without a car.⁵
- ***Neighborhood Revitalization.*** Businesses can help preserve the stability of and revitalize existing neighborhoods that are located⁶ near transit. They can help revitalize distressed neighborhoods, where many small, neighborhood-serving businesses are located and help the local economy by boosting local property values and local sales tax revenues.^{7,8} The success of a few businesses near transit will attract additional businesses, attracting investment, promoting efficiencies that increase productivity, innovation & economic performance.^{9,10,11}
- ***Economic Development.*** Businesses locating near transit can realize greater financial returns, including business operating cost savings, greater return on investment, higher employee productivity and reduced wage premiums.^{12, 13, 14}
- ***Accessibility.*** Businesses that locate near transit provide their employees, clients and customers with



more transportation options, including walking, bicycling, transit and driving.^{15,16,17, 18}

- **Agglomeration.** Businesses locating near transit realize human capital benefits because of their proximity to other related businesses, including access to a larger workforce and more attractive commuting options than just driving: There are also knowledge spillovers from being closer to related firms.^{19,20,21,22,23,24,25}
- **Environmental & Health.** By providing workers with more transportation choices, businesses can realize considerable health care cost savings because workers can walk to and from the transit station and other destinations, increasing physical activity and reducing the likelihood of being overweight. Workers also may be less stressed if they do not have to face a long commute on the road. There are also environmental benefits from reduced congestion (cleaner air) and energy efficiency from locating in a more urban location.^{26,27,28,29,30}

Transit lines that connect more jobs have higher ridership. The location of one's job relative to transit is often found to be a more important factor in determining whether or not someone will take transit than how close someone lives to transit.³¹ A 2009 study by Reconnecting America found a positive correlation between transit ridership and the number of jobs connected along newly constructed light rail lines in Houston, Denver, Minneapolis, San Diego, Los Angeles, and Portland.³² In fact, research on transit ridership going back to the seminal Pushkarev and Zupan study from 1977 finds strong correlations between employment density in job centers connected to transit lines and ridership.³³

Transit is well-suited to serve commuters, especially those working in a central downtown or major job center. Currently, 50-80% of all transit trips are commute trips or related to work (i.e., midday trips from work).³⁴ Commute trips are more predictable, and easier to align with transit

schedules. Transit frequency is also often highest during standard commuting hours, again, making it easier for users to choose to commute to work via transit. Workers commuting downtown are especially apt to choose transit as their commute mode. A survey in the Denver region found that downtown workers rated transit as more important than those working outside of downtown.³⁵ These interview findings are supported by national research that found that downtowns had significantly higher transit ridership than regions or even central cities overall.³⁶

Workers who have transportation choices can save money, be more productive, and lower stress. Studies have found that workers who can take transit or reduce their commute times are more productive and happier.³⁷ The American Public Transportation Association's monthly Transit Savings Report estimates that commuters can save hundreds or thousands a month on transportation costs by switching to transit, depending on their location and the services available.³⁸ In May 2013, the average transit commuter saved \$816 a month and 9,800 per year. The savings are even greater if workers choose to live in a transit-oriented community with shops and services nearby because it reduces their need to own a car and facilitates more walking instead of driving, thereby increasing levels of physical activity.

The cost savings provided by transit can be translated into regional economic benefits. A CEOs for Cities study found that money individuals saved on transportation costs by using transit, walking, and biking instead of driving saved the Portland region a collective \$2.6 billion a year – and those dollars boosted spending on other goods and services in the local economy.³⁹ This “walkability dividend” translates into financial and time savings of almost 4% of GDP,



and provides ancillary benefits such as cleaner air and lower rates of obesity.⁴⁰

Development along new light rail lines tends to follow jobs.

A 2011 CTOD study found that proximity to existing employment centers and downtowns were important factors for where new development along transit lines would occur. Seventy-two percent of development along the Hiawatha Line was in downtown Minneapolis, and 64 percent of development along the Blue Line was in Uptown Charlotte. In the Denver region, development along the Southeast Corridor is closely tied to growth in employment along the line.⁴¹

Connecting jobs to transit reduces congestion and improves regional economic strength.

The length and cost of commuting impacts the individual workers making the trip, but it also has an impact on the region's economic vitality. Several regional governments, including the Denver Regional Council of Governments' (DRCOG) in its 2035 MetroVision Plan, and the Twin Cities Metropolitan Council in its 2030 Transportation Policy Plan, acknowledge that mounting congestion, rising housing and transportation costs and limited fiscal resources all challenge the economic vitality of their regions and should be addressed through smarter investments in pedestrian, bicycle and transit infrastructure, as well as compact, mixed-use development in designated areas that are near existing transportation infrastructure.^{42,43}

Transit-oriented regions attract "talent," benefitting businesses and the region.

A recent study for the Economist found that access to "talent" was one of the main determinants of an economically competitive region and that those talented workers are attracted by regions with a high quality of life.⁴⁴ In the U.S., talent is increasingly defined by the creative class and Millennials, demographic groups drawn to places that offer a

different kind of lifestyle than the old suburban model. In the last U.S. census, almost two-thirds (64%) of college-educated 25- to 34-year-olds said they looked for a job after they chose the city where they wanted to live.⁴⁵ CEOs for Cities found that "This younger generation of workers prefers lifestyles that offer myriad opportunities for social interaction and the exchange of ideas. This generation doesn't want to commute by car."⁴⁶ Downtowns and job centers connected by transit offer commute choices these workers want.

The business community also benefits directly through increased economic productivity when firms cluster in job centers.

Studies have found that doubling employment density improves productivity overall by about 6 percent, while in urban areas specifically, doubling employment density increases patent activity by 20 percent.⁴⁷

Businesses (especially retail) located in compact, walkable environments make more money.

Edward McMahon of the Urban Land Institute compared two Barnes & Noble Booksellers location in Maryland and found that the store located in a walkable, mixed-use community generated significantly greater sales than the store located in a strip mall. The walkable downtown Bethesda location earned 15 percent more than Rockville in one year and made 20 percent more per square feet.⁴⁸

Impacts of the commute trip are far reaching.

While work-related trips total 19 percent of all trips by all modes, their impact is disproportionately larger. That's because freeway systems and arterial streets are typically built to accommodate the crush of traffic – or "peak demand" – as people head to and from work each day.⁴⁹ This has an enormous impact on the physical fabric of communities as freeways are built or widened, and more neighborhood streets converted to fast-moving arterials.⁵⁰



Locating or expanding near transit can save businesses money, especially on parking costs.

Businesses locating in places that are already transit-rich can provide less parking because more of their workers and customers will take transit. The Pittsburgh Downtown Partnership found that more than 125,000 workers commute into downtown Pittsburgh every day, and that if every one of them drove alone, the entire 50-acre downtown would be a parking lot. Fortunately, more than half of downtown Pittsburgh workers commute on foot, by bike or on transit, providing the downtown with a vibrant, animated street life – which is good for business.

Barriers: Key Challenges to Connecting Workers to Jobs via Transit

Not all jobs are accessible via transit. In a regional economy that has increasingly suburbanized over the last few decades, jobs are everywhere, and transit does not reach all of them. The Brookings Institution found that most major transit systems don't do a very good job of bridging the gap between where people live and work. Over 75% of all jobs in the nation's largest 100 metro areas are in neighborhoods served by transit (77 million jobs), yet the typical job is accessible to only about 27% of the workforce within a 90-minute transit commute. With about 63% of jobs in the suburbs, where transit service is less extensive, it makes it hard for people to rely on it as a transportation mode to get to work. Even if being located near transit is beneficial, most firms aren't going to move because of the sunk costs of their current location, and even ones located near transit may find it too costly to stay there once transit opens.

Off-peak workers: Transit tends to offer the most frequent service during “peak” commuting hours, 7-9 am and 4 to 6 pm. Workers with off-peak shifts

(in hospitals, retail, manufacturing, etc.) may not be able to rely on transit as well as those working more traditionally timed jobs.

Not all jobs are transit-oriented: Construction, manufacturing, and transportation and warehousing are three industry sectors that have traditionally been difficult to serve with transit. There is a growing movement towards more vertical manufacturing in tech companies, however. Thinking through how these jobs, which may offer higher wages and career ladders for lower skill workers, can be connected to the transit network is an important question.

Work-supportive services aren't near transit.

People have many other places to go besides their workplace. Getting to work is just one part of the equation for many people. They also have to take their children to childcare or school and run errands. If these destinations are not near transit stations, then transit-dependent workers are forced to endure long commutes taking care of all of their daily needs. Parents may choose to drive to work if their childcare options are not located near transit. A California study of childcare locations found that parents dropping children off at childcare centers near transit were more than twice likely to take transit, walk, or bike to work themselves.⁵¹

Planning efforts do not incorporate economic development.

Very few regional plans address economic development. The closest most come is in the citywide comprehensive land use plan, or in the case of the economic development agencies, a strategic plan or page on their website focused on transit/TOD. Only a handful of station area plans address economic development in a meaningful way.

Connectivity challenges. Getting to and from the workplace and other destinations via transit may still be a challenge if there is a lack of supportive infrastructure between the station and these



destinations. Sidewalks, bicycle lanes, connector bus routes, employer-provided shuttles and other last-mile connections are often sorely lacking, and funding is often very limited to provide these services.

Employer perceptions of transit. Many employers see transit as more of an amenity than a critical need for their employees, so they do not factor in transit accessibility when selecting a location. Moreover, depending on the type of business, it may be better for them to locate near a highway or in an industrial park away from transit, leaving workers with little option but to drive to work. Some employers also may find lower rents in suburban locations far away from transit, but where they can provide free parking.

Weighing the Benefits vs. Barriers: Things to Consider

The closer jobs are to transit, the more likely workers are to take transit. Workers who live and work near transit are three times more likely to commute by transit than those who work farther from rail stations. This is true both for the people working in central business districts and in job centers in the suburbs.⁵² Downtown workplaces have higher transit ridership in part because CBDs typically have high-quality high-frequency transit service, because they are walkable and have a mix of uses, and because traffic congestion and the high cost of parking are disincentives to driving. So while 49 percent of people working in downtown San Francisco commuted in transit by 2005, less than 5 percent of workers in surrounding suburban employment centers commuted by transit.⁵³ However, being able to live near transit is also key. An earlier study found that people who worked and lived near rail stations were six times more likely to commute by transit than those who live far from transit.⁵⁴

Job centers that have a mix of uses, including amenities and services, are more likely to support transit users. If workers need to make side trips to drop children at child care or to run errands or if there are no restaurants or retail near their offices, they are less likely to choose transit for their commute.⁵⁵ Higher density employment centers are especially appropriate places for a mix of land use types because they can support more businesses and a more walkable environment.⁵⁶ Ensuring that walking or biking to restaurants and services is easy and pleasant can also support transit ridership during the commute.

Many factors aside from transit access alone influence whether workers will take transit to their jobs. Workers are more likely to commute by rail if frequent feeder bus services are available at one or both ends of the commute trip, if their employers help cover the cost of taking transit, and if parking is in short supply.⁵⁷

An integrated, regional transit network is key. Expansive, integrated transit networks and transit-supportive development provide more diverse economic opportunities than individual transit lines and can therefore support upward mobility and better sustain economic fluctuations.⁵⁸ More expansive transit networks also support higher densities of jobs near transit stations, increasing the overall share of jobs that are transit proximate exponentially. This has implications for the benefits for businesses—when the transit system offers a high level of accessibility for workers of all skill levels, firms are more likely to want to locate near transit.⁵⁹ Employment is a regional issue, and planning for integrating jobs and transit should consider the regional perspective.

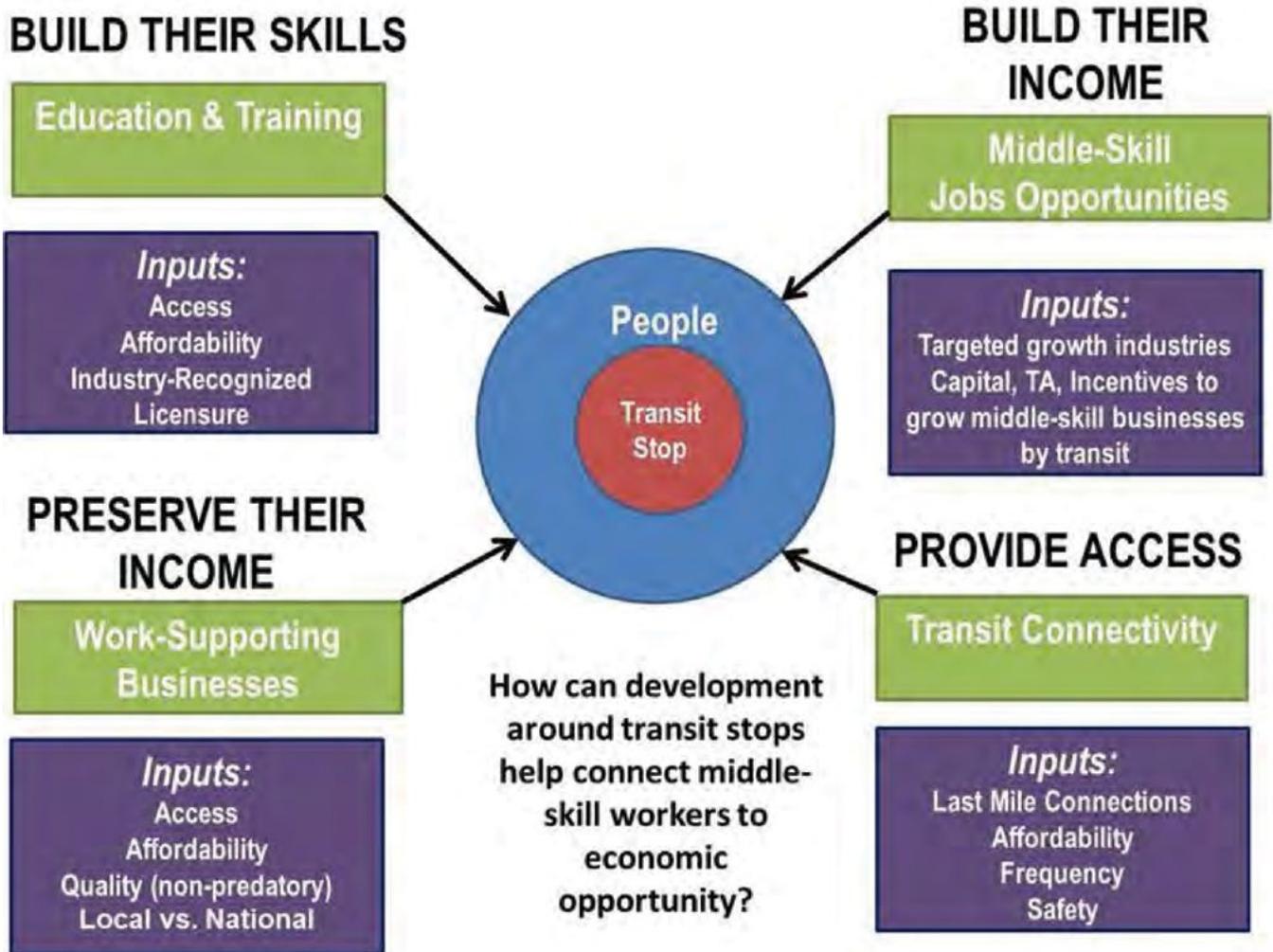


A Plan of Action: A Roadmap for Creating Economic Opportunity at Transit Stations

Step 1: Engage your workforce and economic development departments. Typically the staff from economic and workforce development agencies do not work with each other on a regular basis and they often make decisions independent of each other. Connecting workers to economic opportunity and maximizing the return on investment in a regional transit system requires the breaking down of these silos and the integration of economic and workforce development initiatives. Other departments, such as planning and public works, should also be engaging with economic and workforce development staff to

understand the barriers that workers and businesses face, and to figure out ways to align all of these individual efforts into a holistic, systems-wide approach to improving economic opportunity.

Step 2: Understand your assets and analyze them. Every transit station is different and presents unique opportunities for development. Local governments should conduct more in-depth research and analysis on the station area, corridor and municipality to see what types of businesses and jobs are already there and how to retain and promote growth among them. This will also help officials figure out what industries to target for the station areas, and what types of land use, zoning, etc. are required for the station area to thrive economically.



Source: Reconnecting America, A Station Area Typology of Economic Opportunity



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Step 3: Develop a strategy to retain & grow existing businesses that fit the corridor mix.

Target the jobs most likely to locate near transit and then identify ways to retain existing businesses while also attracting new ones. Government-sector jobs are more likely to be located near transit than any other sector, with 42 percent of all public sector jobs located near fixed-guideway transit in 2008. Knowledge-based industries (Professional, Scientific, and Technical services) are close behind, with 36 percent near fixed-guideway transit. These jobs tend to be more transit-friendly because they are more likely to be office-based and are sensitive to the benefits of locations in high density areas. High quality transit access requires less parking and facilitates vertical density.⁶⁰ Higher densities, in turn, support higher ridership on transit systems.

Step 4: Develop a strategy to attract, retain & grow businesses with middle-skill jobs.

The industries that typically locate near transit (government and professional jobs) usually employ higher skill workers with advanced degrees. Thus, a separate strategy is needed to focus on those businesses that employ middle-skill workers such as manufacturing, construction, education and healthcare, as these industries usually have different location preferences that often work against transit-oriented development. Work with local employers and workforce training providers to understand their needs and identify tools and strategies to incentivize transit-oriented locations for businesses that offer middle-skill job opportunities. Explore zoning changes that facilitate economic development. Preserve existing industrial zoning where it is appropriate and also explore more flexible industrial mixed-use zoning districts to allow for transitional uses and higher densities.

Step 5: Develop a strategy to promote work-supportive services like training and childcare. Getting to work is just one part of the

equation for many people. They also have to take their children to childcare or school and run errands. If these destinations are not near transit stations, then low- and middle-skill workers are forced to endure long commutes taking care of all of their daily needs. Where possible, local jurisdictions should encourage retail businesses and early childhood care providers to locate near transit station areas, possibly by providing incentives.

Step 6: Promote last mile connections. One of the biggest challenges to getting workers to take transit is the “last mile”—the distance between the workplace and the transit station. Often it is too far to walk, or the walk itself is unsafe or inconvenient. Local jurisdictions, transit agencies, MPOs and other government agencies should work with employers and community-based organizations to identify ways to get employees from the transit station to their place of work, whether by investing in streetscape improvements (for walking), installing bike routes, implementing (or expanding) the bike-share systems, circulator shuttles.

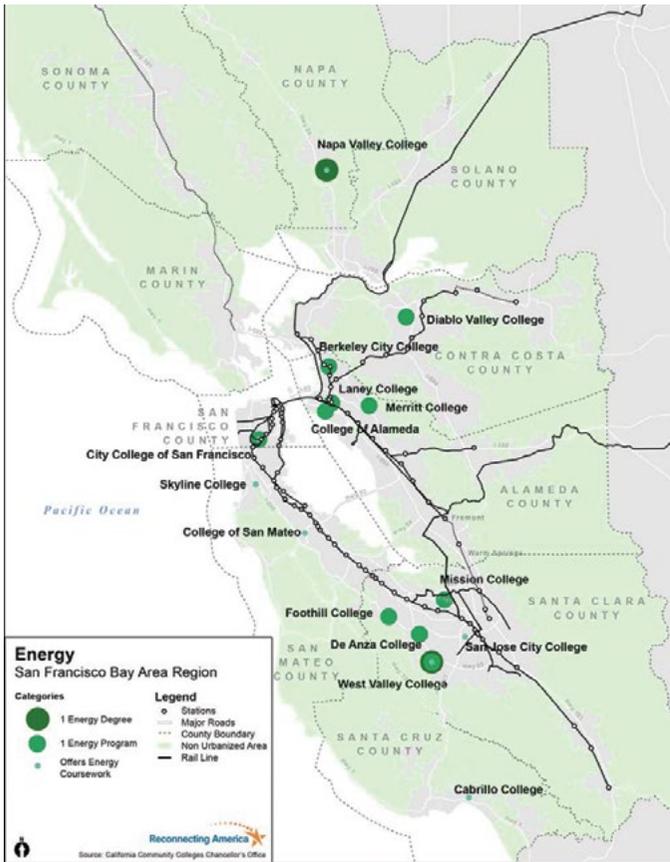
Step 7. Incorporate economic development into station area and neighborhood plans.

Engage local economic development staff in the planning process to understand their priorities and also what resources are available for improving connections to jobs and workforce training through transit.

Case Studies

Two recent studies that Reconnecting America completed with partnering coalitions for equitable planning, Denver’s [Station Area Typology of Economic Opportunity](#) and the Bay Area [Moving to Work Project](#), provide solutions to improving the connection between jobs, workforce development and transit.





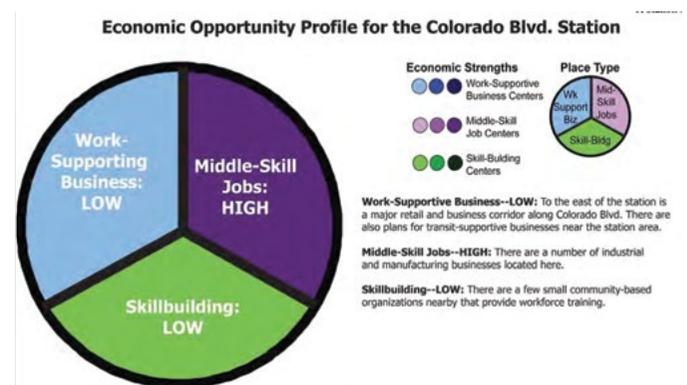
An overlay of specialized educational opportunities for a Bay Area “industry of opportunity” with rail transit lines.

[View full-size PDF](#)

In the Bay Area, the Moving to Work team found that the economic and workforce development fields often overlook a key barrier for building the economy and connecting lower income workers to jobs: transit access. In turn, transit advocates often overlook the importance of job creation and training to building a stronger Bay Area economy as well as asset building. The study team found that lower income jobs are six times more dispersed across than region than high income jobs—making them that much more difficult to connect to frequent, 24-hour transit service. Solutions were discussed by identifying and key “industries of opportunity” – industries that provide a significant share of jobs accessible to workers without a bachelor’s degree that provide a living wage. In the Bay Area, these industries include healthcare, energy, transportation and logistics, manufacturing,

biotech, and information technology. The team mapped the location of firms in these sectors and identified the share of jobs near transit and where they were concentrated, as well as the workforce training institutions (i.e. community colleges and One-Stop Centers) that give specialized training in these sectors, to identify key opportunities and barriers related to increasing worker access to these opportunities.

In Denver, Reconnecting America comprehensively analyzed the areas surrounding the stations of the region’s burgeoning passenger rail transit system. After listening to a coalition of transportation and community advocates, regional foundations, public officials, and citizen groups, Reconnecting America calculated the relative opportunities for employers, middle-skill jobs that require a high school diploma (but less than a 4-year degree), and skills training (either in courses or on-the-job). In addition to creating this dynamic typology of each station area, policymakers in the Denver area were presented with a menu of critical actions for linking opportunities to this transit system, including strategies for transit-oriented development, business retention and facilitating connections for the “last mile” of a transit-based journey.



Breakdown of a station typology of economic opportunity in the Denver region. [See more here.](#)

Portland Economic Development

The Portland Development Commission (PDC)



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developed a five-year Economic Development Strategy in 2009 that aims to create 10,000 jobs over five years and expand economic opportunities for all Portland residents. Despite farsighted investments in transit, land use planning and energy efficiency, the Portland region has seen stagnant job growth and high rates of unemployment. The region has the talent and the built environment infrastructure, but not the business infrastructure to support these people and systems. To fully maximize those investments and accommodate a growing workforce, the region's leaders realized they needed to focus on economic and workforce development, especially in targeted industry clusters where Portland has a competitive advantage. The strategy has three components: **competitiveness, urban innovation and neighborhood business vitality**:

- Generating robust job growth by **maximizing the opportunities** to produce and sell products and services for existing, emerging and relocating businesses
- Maintaining a leadership position in sustainability by constantly striving to produce an **innovative urban setting** that fosters creativity and invention
- Achieving broad-based prosperity by stimulating **economic activity in neighborhoods** throughout the city

The PDC identified four industry clusters, which represent 13% of City employment and 16% of regional employment: clean tech, advanced manufacturing, software and active-wear. All four are traded sectors with a high concentration of talent and firms, fast growth, high wages and a multiplier effect. It then developed a "Cluster Organizing Framework" with six steps: (1) investigate, (2) inventory, (3) convene, (4) diagnose, (5) act and (6) evaluate. The PDC then created an implementation framework and a set of metrics to evaluate progress toward its goal of creating the greenest economy in the U.S. As of July 2012, just three years into the five-year plan, the PDC had exceeded its goal of creating 10,000 jobs

by 6,300. Through financial assistance programs to 176 existing companies and 19 new ones, the PDC was able to retain 1,500 jobs and create an additional 2,750 jobs.

Phoenix

The Maricopa Association of Governments (MAG) developed a **metropolitan business plan** in 2011 with the help of the Brookings Institution, Greater Phoenix Economic Council and academic leaders. It addresses economic development in the context of the regional transportation network. The plan included a market analysis and strategy development phase focused on identifying major industry clusters and economic strengths. The next phase was to select a lead initiative and develop and implementation plan to put the lead initiative into place. The group identified five market levers that drive regional economic performance: (1) regional concentrations, (2) deploy human capital aligned with job pools, (3) innovation-enabling infrastructure, (4) spatial efficiency and (5) effective public & civic & culture & institutions. The group's targeted industry clusters were: aerospace, electronics & semiconductor, personalized medicine, information technology and renewable energy.

Building a Quality Arizona is a statewide effort modeled after the Phoenix region's Regional Transportation Plan, which aims to develop a statewide transportation framework that addresses economic and workforce development. Five working papers are being developed to make the case for a sustainable, multimodal transportation network that connects jobs and the workforce via transit. The statewide coalition has undertaken demographic, market and employment analysis studies to understand existing conditions and identify places with the greatest suitability for transit and other transportation investments that can better connect the state's working population to economic opportunities.



San Francisco Bay Area

The Bay Area has produced several regional economic development plans with targeted strategies for equitable economic development. The Bay Area [Vision Equitable TOD Strategies for Planners](#) contains strategies to retain and grow good jobs in TOD:

1. Identify important asset-building job bases, including small commercial districts and manufacturing centers, and how they will fit within a proposed new vision & zoning
2. Hire locally & provide job training so that, combined with strategies to draw large employers, area residents can take advantage of future job opportunities and other resources in TOD. New businesses must provide opportunities for ongoing employment
3. Protect & enhance minority-owned biz districts since they hire more minority & LI employees

The [East Bay Economic Development Alliance](#) conducted an in-depth analysis of employment trends and the general business environment of the East Bay (Oakland) region. The report identified the location and composition of major employment clusters, business moves/births/deaths over the past fifteen years, implications of existing infrastructure performance and needs, historic land use shifts, labor market strengths and challenges, and relative strengths and challenges affecting the future of sub-areas within the region. Interviews with business leaders further informed the analysis. Strategic Economics applied a spatial and historical perspective to the employment and land use analyses. As part of this analysis, a series of maps were produced to examine how industry and land use changes were occurring across regional sub-areas, and how passenger and goods transportation infrastructure affected the location decisions – and future viability – of East Bay employment. Strategic Economics also examined how the East Bay’s unique innovation assets – such as University of California, Berkeley – affect the East Bay and regional

economies. The results of these analyses provided an easily-understood and accessible analytical basis to inform future policy decisions concerning economic development and regional planning.

Washington DC Metro’s Business Case for Transit, 2012⁶¹

For its 35th anniversary, WMATA prepared a case study of what the region would look like if it had never built the Metro system. It attempted to isolate the impacts of rail on the region’s economic development, property values and tax revenues in the immediate vicinity of each station. In general, the Metro boosts property values 7-9% within a half mile of stations, with higher value boosts for commercial (8.9%) than residential (6.8%), but the highest boost for multi-family residential (9.4%). This translates to an additional \$224M of property tax revenues for the District of Columbia, just from the half-mile radii around each station. If Metro had never been built, WMATA estimates that the DC region would have had to spend an additional \$6B on new roads and the equivalent of 166 blocks of five-story parking garages to accommodate everyone driving to work. Metro supports businesses, so businesses locate near Metro—economic activity tied to Metro’s presence is critical to the economic success of the region. Businesses locate near Metrorail stations because it expands their pool of employees and their pool of customers. Approximately 2 million jobs (54% of all regional jobs) are accessible within a half-mile of a Metro station, and another 300,000 are within one mile of a station. Metro operations support 14,900 direct and indirect jobs.



Endnotes & Other Resources

1. American Public Transportation Association, 2009. [The Economic Impact of Public Transportation Investment.](#)
2. Center for Transit-Oriented Development, 2011. [Transit and Regional Economic Development.](#)
3. Center for Transit-Oriented Development, 2011. [Transit-Oriented Development & Employment.](#)
4. Center for Transit-Oriented Development, 2008. [TOD 202: Transit and Employment: Increasing Transit's Share of the Commute Trip.](#)
5. Ibid, see endnotes 2-4.
6. Center for Transit-Oriented Development, 2011. [Rails to Real Estate: Development Patterns along Three New Transit Lines.](#)
7. [Making the Case for Transit: WMATA Regional Benefits of Transit.](#)
8. American Public Transportation Association. [Transit Means Business.](#)
9. CTOD, [Rails to Real Estate](#), see endnote 6.
10. WMATA, see endnote 7.
11. APTA, [Economic Impact](#), see endnote 1.
12. APTA, [Economic Impact](#), see endnote 1.
13. CTOD, [TOD & Employment](#), see endnote 3.
14. Brookings Institution, 2012. [Where the Jobs Are: Employer Access to Labor by Transit.](#)
15. CTOD, [Transit & Regional Economic Development](#), see endnote 2.
16. CTOD, [TOD 202](#), see endnote 4.
17. Brookings Institution, see endnote 14.
18. Denver Regional Council of Governments, 2009-2010. [Who is TOD?](#)
19. Transit Cooperative Research Program (TCRP), 2012. [Methodology for Determining the Economic Development Impacts of Transit Projects.](#)
20. APTA, [Economic Impact](#), see endnote 1.
21. Association of Bay Area Governments. [Bay Area Vision Equitable TOD Strategies for Planners.](#)
22. CTOD, [Transit & Regional Economic Development](#), see endnote 2.
23. CTOD, [TOD 202](#), see endnote 4.
24. East Bay Economic Development Alliance, 2011. [Building on Our Assets: Economic Development and Job Creation in the East Bay.](#)
25. CTOD, [Rails to Real Estate](#), see endnote 6.
26. WMATA, see endnote 7.
27. Public Policy Institute of California, 2011. [Making the Most of Transit: Density, Employment Growth and Ridership Around New Stations.](#)
28. CTOD, [Transit & Regional Economic Development](#), see endnote 2.
29. CTOD, [TOD & Employment](#), see endnote 3.
30. CTOD, [TOD 202](#), see endnote 4.
31. PPIC, see endnote 27.
32. CTOD. ["Destinations Matter: Building Transit Success,"](#) 2008.
33. Pushkarev and Zupan. ["Public Transportation and Land Use Policy,"](#) 1977.
34. 2007 APTA [Transit Factbook.](#)
35. DRCOG. ["Who is TOD in Metro Denver? Employee Survey Report,"](#) April 2010.
36. Pisarki, Alan. ["Commuting in America III,"](#) 2006.
37. Stutzer, A. and B. S. Frey. ["Stress That Doesn't Pay: The Commuting Paradox,"](#) 2004. Guliana, E. et al. ["The stress of driving: A diary study,"](#) *Work & Stress*, Volume 4, Issue 1 January 1990.
38. APTA May 2013. [Transit Saving Report.](#)
39. CEOs for Cities. ["Portland's Green Dividend,"](#) July 2007.
40. Richard Florida, ["Toward the Walkable City,"](#) Atlantic Cities, January 7, 2013.
41. CTOD, [Rails to Real Estate](#), see endnote 6.
42. DRCOG. [MetroVision 2035.](#)
43. Metropolitan Council, 2013. [2030 Transportation](#)



Policy Plan.

44. Economist Intelligence Unit. “Hot spots: Benchmarking global city competitiveness,” 2012.
45. Ania Wieckowski, Harvard Business Review, The Magazine, May 2010
46. Reconnecting America, “Are We There Yet? Creating Complete Communities for 21st Century America,” 2012.
47. Antonio Ciccone, and Robert E. Hall. “Productivity and the Density of Economic Activity,” 1996.
48. Ed McMahon, Urban Land Institute.
49. Pisarki, Alan. “Commuting in America III,” 2006.
50. CTOD, TOD 202, see endnote 4.
51. Local Investment in Child Care. “Smart Growth for Families: Transit Linked Child Care,” PowerPoint presentation, 2009.
52. Cervero, Robert. “Office Development, Rail Transit, and Commuting Choices,” 2006.
53. Pisarki, Alan. “Commuting in America III,” 2006.
54. CTOD, TOD 202, see endnote 4.
55. Ibid.
56. CTOD, TOD & Employment, see endnote 3.
57. Ibid.
58. Strategic Economics. “FTA New Starts Economic Development Criteria,” November 2006.
59. CTOD, Transit & Regional Economic Development, see endnote 2.
60. CTOD, Transit & Regional Economic Development, see endnote 2.
61. WMATA, see endnote 7.

