BUILDING
Healthy Corridors

STRATEGY AND RESOURCE GUIDE

Nearly every community in the United States is plagued by underperforming commercial corridors. These arterials are characterized by wide roads, automobile-oriented services, buildings set back from the street, and narrow (or nonexistent) sidewalks. Residents who live along these corridors do not have easy access to healthy, fresh food; safe, walkable streets; and services that meet their everyday needs.

The design of these built environments have direct links to increases in chronic diseases such as Type 2 diabetes, asthma, and heart disease, all of which tend to be more prevalent in low-income communities and communities of color. However, by focusing on health as a core value for redevelopment, these corridors can be reshaped into places that put people—not cars and other vehicles—first.

It is important to note that the process of redeveloping these corridors into health-promoting places cannot—and should not—be done by only one type of stakeholder. A multitude of partners and stakeholders—including health professionals, planning and transportation departments, other city and county departments, the business community, real estate developers, architects and urban designers, and residents and community groups—must all be part of the process, from the beginning stages of communication and engagement to the later stage of setting the vision for the corridor and the final stage of implementation. Forming a corridor leadership group of a variety of stakeholders to oversee efforts, to plan workshops and convenings, and to help push decision making along helps ensure that the healthy corridor vision is ultimately implemented.

Building a healthier corridor means that health must be part of the process and the discussion from the very beginning. Many times political decision makers do not consider health when they implement new policies and programs or when they make built-environment-related decisions. By engaging health partners in planning decisions, a health perspective and health data can become a key part of decision-making processes. A specific tool to achieve this, the health impact assessment (HIA), can be used to analyze the impacts of a proposed policy, plan, or project on the health of current and future residents.

HIAs are typically led by health professionals, but planners, designers, developers, other stakeholders, and residents all have a role to play in the process to ensure that all perspectives are included and that the proposal minimizes negative health impacts and maximizes positive health benefits. However, an HIA is not required to bring a health perspective to land use changes; simply engaging with local health partners and ensuring that they are a key part of planning for corridor redevelopment can achieve this goal as well.

This guide provides a menu of strategies and resources for including a health focus within redevelopment efforts, and it is intended to serve as a resource for communities looking to redevelop commercial strip corridors. It complements the report *Building Healthy Corridors: Transforming Urban and Suburban Arterials into Thriving Places*, which can be downloaded from uli.org/healthycorridors.

A health impact assessment (HIA) is an evidence-based process that engages the community, gathers health-related information, and identifies strategies to improve community and individual health. Used to identify potential health impacts of projects, plans, and policies, HIAs consist of six phases typically used in other types of impact assessment: screening, scoping, assessment, recommendations, reporting, and evaluation and monitoring.

Table of Contents

Community Engagement and Visioning Strategies

CORRIDOR REDEVELOPMENT CAN PROMOTE THE HEALTH of the people who live, work, and travel along the corridor. Key first steps for undertaking this effort include

» engaging with key stakeholders from a variety of groups and sectors,

» determining the assets and challenges of the corridor, and

» crafting a vision for the corridor and adjacent neighborhoods.

Stakeholder engagement, community empowerment, and asset mapping—described below—are methods that together constitute a visioning process. Visioning engages community members and other stakeholders to discuss issues, identify community assets and challenges, and design a plan for the future. A strategic visioning process provides a framework that outlines where the community is now, where the community appears to be heading based on trends, a preferred vision for the future, actions needed to achieve that vision, and plans for implementation.

Visioning should engage all stakeholders, particularly those who are affected by changes made to a specific part of the community, including a corridor area. A leadership group for the corridor—comprising key stakeholders—should lead these processes and identify other stakeholders to engage. A finalized visioning document will make the corridor a strong candidate for public sector funding and private sector financing.

The results of a strategic visioning process can be made into an interactive display online. For an example, see San Francisco's **Better Market Street initiative**.

Stakeholder Engagement

Who is responsible: the corridor leadership group, all stakeholders, and community members

Stakeholder engagement—a critical facet of understanding and addressing concerns about any redevelopment or planning process—is the process by which an organization such as a corridor leadership group involves all those who affect or who could be affected by the planning, implementation, and evaluation of its decisions. Stakeholders provide a "reality check" on the feasibility, appropriateness, and scale of the proposed plans or projects in their community.

Stakeholders have different levels of commitment and involvement, and they may have divergent interests or conflicting concerns. They may support or oppose the organization's decisions, hold relevant elected positions, be influential members of their community or organization, or be affected in the long term by decisions made about the corridor.

When working to create a healthy corridor, it is important to ensure that the voices of those affected by the current and future state of the corridor and its surrounding neighborhoods are heard and respected. Understanding stakeholder needs at the outset ensures that a project proceeds as smoothly as possible, with buy-in from those affected.

Stakeholder engagement can often be an expensive and top-driven process. A key part of ensuring that the process has support and follow-through is engaging in the process of **community empowerment**, which enables community members to represent and speak for their own interests.

The table below lists a number of key stakeholders that may need to be engaged in any community redevelopment process to ensure a healthy, inclusive, and sustainable corridor redevelopment process.

Stakeholder Engagement: Key Entities to Include

Government Authorities	Business and Industry
ROLE: Provide, interpret, and present data to address community concerns	**ROLE:** Provide perspectives on how their business, livelihood, property value, or cost of living may be affected
» Public health and recreation departments » Transportation and public works agencies and operators » Safe Routes to School coordinators » Planning, zoning, and historic preservation departments » Environmental justice divisions » Police and emergency services » Public officials and representatives	» Local businesses, industries, developers, and landowners » Anchor institutions, such as hospitals, schools, universities, or major employers » Tourism bureaus » Local food chain suppliers and preparers

Community Groups	Media
ROLE: Leverage their knowledge, skills, and experience to ensure the project has a context-sensitive approach	**ROLE:** Inform the public about the project; reach different linguistic, ethnic, industry, age, and interest groups

» Community-based organizations (CBOs)
  • Cultural, ethnic, faith-based, and arts associations
  • Labor groups (unions, professional associations)
  • Parent, student, youth, and senior groups
  • Disability groups
  • Gender-based associations (women, LGBTQ)
  • Advocacy groups (health, environmental, transport, social, safety)
» Researchers and academics
» Residential groups (homeowner associations, neighborhood advisory groups, and community garden spaces)
	» Radio
	» Newspapers and magazines
	» Television
	» Community kiosks and message boards
	» Social media

Financial Institutions
ROLE: Fund and evaluate the feasibility of the project
» Banks (community banks, credit unions, and conventional banks) » Insurance companies and foundations involved in the delivery of the project

Additional Resources

» **Steps to Creating a Safe Routes to School Program** (Pedestrian and Bicycle Information Center)

» **Promoting Equity through the Practice of Health Impact Assessment** (PolicyLink)

» **Healthy Corridor for All: A Community Health Impact Assessment of Transit-Oriented Development Policy in Saint Paul, Minnesota** (PolicyLink)

» **Successful Transport Decision-Making: A Project Management and Stakeholder Engagement Handbook** (European Commission)

» **Inclusive and Sustainable Urban Planning: A Guide for Municipalities Volume 1: An Introduction to Urban Strategic Planning** (UN Habitat)

» **Moving Toward Equity Stakeholder Engagement Guide** (American Institutes for Research)

Community and Resident Empowerment

Who is responsible: the corridor leadership group, all stakeholders, and community members

Residents who live along the corridor are stakeholders, and they are critical to the redevelopment process. They must be empowered to advocate for their needs and not feel that changes they might not want or understand are being pushed upon them. For communities to feel empowered and invested, they must have the will and knowledge to lead, and they must participate in planning and redevelopment processes. However, outside consultants with experience in community empowerment may be useful in helping to create grass-roots leaders to ensure the success of the revitalization effort.

Additional Resources

General Information:

» **Community Empowerment Manual** (Partners for Livable Communities)

» **Do Community-Engagement Toolkits Work?** (Center for Community Innovation)

Group Activities and Online Tools:

» **Vacant Lot Activation Workshops** (T.R.U.S.T. South LA)

» **Recycled Art and Play in Community Visioning** (Cite: The Architecture + Design Review of Houston)

» **The Cost of Affordable Housing: Does It Pencil Out?** (The Urban Institute)

» **Streetmix Tool for Designing Streets** (Streetmix)

» **50 Tools for Online Public Engagement** (Community Matters)

» **AARP Livability Index** (AARP)

Asset Mapping: Creating a Baseline for Growth

Who is responsible: the corridor leadership group, all stakeholders, and community members

An inventory of all existing community resources that can be leveraged to promote opportunities for improving health can be developed through asset mapping. Asset mapping creates a baseline for the monitoring and evaluation of the project as it develops. The more community assets that can be quantified in this process, the more eligible a project becomes for grants, loans, and awards. Asset mapping should engage all stakeholders and enhance community participation and empowerment.

Steps to create an asset map include

» **1.** identifying community boundaries;

» **2.** identifying and including key partners in the asset-mapping process;

» **3.** determining which resources to include (e.g., physical, social, economic);

» **4.** outlining assets of significant groups and individuals in the community; and

» **5.** presenting the data in a visual, interactive format that shows the location of assets relative to other assets.

Asset mapping can also identify area challenges that can be addressed through redevelopment processes.

Asset maps can come in a variety of interactive forms that use colorful paper maps informed by online data visualization tools. Resources for these maps include **Google MyMaps**, **Google Fusion Tables**, **Esri ArcGIS online**, **Socrata**, **Leaflet**, **Mapbox**, **Open Street Map**, and many **others**.

To start, create a prioritized inventory or list of the study area's community assets. Use the links below to view or download publicly available statistics, maps, and directories (so-called "open data") about many cities and towns in the United States and also around the world.

Next, assign each stakeholder in the corridor leadership group the task of exploring and presenting the tools (listed below) that most closely align with the stakeholder's organizational mission statement or scope of work.

Databases to Help Identify and Quantify Corridor Assets

People
What are the lived experiences, unique services, and skills found in the government agencies, businesses, media, financial institutions, and special interest groups in your study area?

Human Capital

» **Stakeholder Identification Directory (on page 4 of this guide):** the table includes a list of key stakeholders to engage to ensure a healthy, inclusive, and sustainable corridor redevelopment process.

» **American Time Use Survey (ATUS)**: data on how, where, and with whom Americans spend their time (volunteering, working, playing sports, caring for children, etc.).

» **U.S. Census American Community Survey**: interactive mapping tools to explore demographic, economic, business, and socio-economic trends.

Unsafe Areas

» **Transportation Injury Mapping System (TIMS)**: examine the study area for places where crash and injury rates are high.

» Crime incidents: city crime report data is available from **U.S. City Open Census Data**; this data can be used to explore the time of day, location, weapon used, and type of crime incidents in the study area. Crime data at the local, state, and federal levels is available from the **FBI Uniform Crime Reporting website**.

Affordability Landscape

» **HUD's Location Affordability Index (LAI)**: the LAI provides data on the percentage of a family's income burdened by the combined cost of housing and transportation in a study area (given household income, size, and number of commuters).

» **HHS's Temporary Assistance to Needy Families (TANF)**: this database shows which applications from families seeking temporary aid to achieve self-sufficiency were received, approved, or denied.

» **HUD's Homelessness Survey**: this dataset outlines the programs for the homeless in specific areas.

» **Predetory lending**: download data and the accompanying **user guide** to understand what percentage of subprime mortgages were issued in the study area (as determined by HUD, lenders, policy analysts, and advocacy groups).

» **Federal Housing Finance Agency's Underserved Areas**: understand where low-income or FEMA-designated disaster areas (or both) are located.

Planet
What are the opportunities and threats to the natural environment in the study area? What types of pollution are different community members exposed to?

Climate Change

» **NOAA National Weather Service**: obtain current, past, and predicted weather, fire, evaporation, rain, heat, sea level, run-off, soil moisture, temperature, and evaporation rates.

» **EPA Power Profiler**: compare the fuel mix and air emissions rates of the electricity in a region, business, or household to the national average.

» **EPA Carbon Footprint Calculator**: estimate the impact of household energy, transportation, and waste on greenhouse gas emissions.

Environmental Justice

» **EPA's Environmental Justice Screen** and **User Guide**: download demographic and environmental data to understand a community's health status and potential susceptibility to pollution.

» **USDA's Food Environment Atlas** and **User Guide**: understand the accessibility of healthy, local, and affordable food, as well as the physical fitness and health rates for different income, age, and ethnic groups.

» **CDC's Social Vulnerability Index** and **User Guide**: understand the health coverage, English proficiency, dwelling conditions, and transportation status of individuals of different ages, incomes, ethnicities, and physical/mental abilities in a given community.

Profit
What values and potential productive uses do the study area's green space, vacant property, unused parcels, businesses, streets, and transportation systems have? What skills and talents are available or needed within the local economy of the study area?

Location Efficiency

» **EPA's Smart Location Database** and **User Guide**: obtain data on housing density, street-intersection density, road-network density, diversity of land use, destination accessibility, transit service, employment, and demographics.

» **Property Tax Assessor's Data**: understand fair market value, current use, property age, sales price, and property owners' names/addresses according to the tax rolls for a community.

Employment Accessibility

» **EPA's Access to Jobs and Workers via Transit**: understand how frequently workers and households of different incomes, demographics, and employment sectors use public transit (based on General Transit Feed Specification transit-service data).

» **GSA's Smart Location Calculator** and **User Guide**: obtain workplace location efficiency scores, Walk Score, Transit Score, and charts on vehicle-miles traveled (VMT), greenhouse gas emissions (GHG), low-income worker job access, and mode split.

Urban Blight and Vacancy

» **HUD's Difficult to Develop Areas (DDA)**: determine which areas have high construction, land, and utility costs relative to the area's median gross income (AMGI).

» **HUD's Neighborhood Stabilization Program**: understand how much the local government has invested to acquire and rehabilitate foreclosed properties.

» **USPS Vacancy Records**: obtain data on properties marked "vacant" by U.S. postal workers based on response rate to delivered mail.

Additional Resources

General Asset-Mapping Guides:

» **Asset Mapping** (UCLA Center for Health Policy Research)

» **Asset Mapping: A Handbook** (Canadian National Rural Conference)

» **Cultural Mapping Toolkit** (Creative City Network of Canada)

» **The Role of Participatory Cultural Mapping in Promoting Intercultural Dialogue** (UNESCO)

Paid Geospatial Analysis Services:

You can access a variety of asset-mapping tools on a subscription basis. When you combine these asset-mapping tools with the open data resources listed above, you will have the most up-to-date community profile and forecast.

» **Community Analyst** (ESRI)

» **CommunityViz** (Placeways)

Design, Arts, Culture, and Programming

PLACEMAKING IS A COLLABORATIVE PROCESS used to shape the public realm to promote better urban design and facilitate creative patterns of use. In placemaking, particular attention is paid to the physical, cultural, and social identities that define a place and support its ongoing evolution. Placemaking aims to strengthen the link between a community and its physical space through design, arts, culture, and programming.

A great place offers people of all ages and abilities a variety of things to do. A great place might feature a place to sit, a playground to play in, a garden to enjoy, art to touch, music to hear, food to eat, history to experience, and people to meet. If each section of a commercial corridor offered some of these features, every resident would have access to inviting and inclusive public spaces within walking distance of their homes or workplaces. This kind of place could create a critical mass of destinations that inspire residents and visitors alike to live actively.

Key dimensions of placemaking are programming and uses, accessibility, comfort and image, and social cohesion (see table below).

Dimensions of Placemaking

Programming and Uses	Comfort and Image
» Homegrown activities make communities cohesive; they create events that inspire companionship and relaxation. » Multipurpose facilities attract a variety of people, provide a space for events, and keep a commercial corridor or neighborhood lively at all times of day. » Examples include a public plaza, a community stage, a farmers market, a playground, a library, a fountain, or a sidewalk café.	» Universally designed amenities, such as seating, shade trees, bike racks, and bulletin boards, welcome residents and visitors alike into the community. » Good management of the area keeps sidewalks clean, prevents paint from peeling off buildings, and creates a welcoming and safe environment. » Good details reflect the unique needs and local character of people of differing ages, abilities, and socioeconomic backgrounds.
Accessibility	**Social Cohesion**
» Visible, legible, and accessible design is key to attracting people to a space. This kind of design helps people orient themselves to the activities, amenities, and gathering spaces of a corridor. » Perceptions of safety are just as important as actual safety on a corridor. Lighting should be at the pedestrian scale. Intersection designs need to allow both older and younger people to cross safely. » Linkages between complementary land uses encourage interaction by connecting facilities at a human scale. » Example: co-locate facilities that will inspire more activity together than apart; for instance, place a playground adjacent to a garden, a newsstand, or a coffee shop.	» A sociable place is one where people want to go to observe the passing scene, meet friends, and interact with diverse people. » Research shows that people have 4.5 times more social interactions in a public market with numerous stalls than in a grocery store. This underscores the importance of creating a variety of public spaces throughout a corridor or area. » Unique, local assets can be found in all communities and can be combined and co-located to promote social interaction.

Additional Resources

» **What is Placemaking?** (Project for Public Spaces)

» **Eleven Principles for Creating Great Community Places** (Project for Public Spaces)

» **Placemaking** (NEXT.cc)

» **What is Wayfinding?** (The University of Michigan)

Leveraging Assets and Opportunities through Branding and Identity

Who is responsible: planners, health partners, developers, business owners, and community members

The assets of a place can be leveraged to affirm and celebrate the diverse identities that exist there. These identities inform residents and other community members of what differentiates the area from other places in the city or region. Branding can project a new image of the place, which may incorporate a focus on health and culture. Branding and identity strategies serve not only as marketing tools used to bring people to a corridor (or an area) but also as wayfinding and communication tools used to promote social cohesion. A strategy for communicating and visually representing the new brand should include a logo, tagline, messaging points, signage, social media, and other marketing tools. Funding may be required to implement the strategy.

A brand or identity should capitalize on the strengths of the area, such as the area's arts and culture, local businesses, or recreation. In vacant spaces, public art (including sculpture or other visual arts) can take a vacant plot and transform it into a place people can visit, congregate in, and enjoy. Covering large blank walls, railings, shutters, aging infrastructure, and sign and utility posts with greenery, murals, maps, and message boards can attract positive attention to the area. Using local artists, eclectic musicians, master gardeners, and neighborhood historians and students to develop and curate these placemaking elements can create a sense of community pride and ownership.

The following tables provide examples of creative **placemaking**, **branding**, and **wayfinding** activities that can be implemented along streetscapes and other physical infrastructure.

Streetscape Opportunities	
Public Spaces	Sidewalks
» Plazas: can be **temporary**; and can be squares, linear passages, courtyards, or **parklets** » **Playstreets**: streets closed to traffic » Festivals: cultural and on streets » Music: pop-up or permanent stages	» Information and wayfinding: projected timetables with **TransitScreen**, **median curbside** printing or printing on pavement » Furniture: placed on **scaffolding** or on **sidewalks** » Recycling: **separate bins** for trash, recycling, and compost; **pneumatic tubes** minimize truck traffic » Shade: using **trellised walkways**, **edible street trees**, **umbrellas**, **tarps**, or **flowering trees** » Pavement art: mosaics, chalk art, or painting
Vacant Spaces	Signs
» Facades: murals on building fronts or walls » Art: on garages, doors, and security gates » Businesses: pop-up art galleries, workshops, and temporary storefronts for startup businesses	» Posts: examples through **Walk [Your City]** » Kiosks: **wayfinding** that encourages walking » Billboards: **signage controls** guide the size, placement, material, and lighting

Infrastructure Opportunities	
Public Transit Design	Freeway, Bridge, and Stair Design
» Bus stops: **modern**, with **books**, with **musical swings**, with **sculpture**, with **greenery**, and built with **unexpected materials** » Subway stations: tile work, **painting**, **celebrating history**	» Freeway underpasses: **art installations**, **trails**, or **playground/cafés** » Bridges: **public spaces** or **parks** » Stairs: cascading art on **steps** and **railings**, or allowing **daylight** and **shadow** through metal filigree

Additional Resources

» **Cultural Districts: The Arts as a Strategy for Revitalizing Our Cities** (Americans for the Arts)

» **Historic Preservation Library** (U.S. General Services Administration)

» **Smithsonian Folkways Lesson Plans** (Smithsonian Folkways)

» **Placemaking as an Economic Development Tool: A Placemaking Guidebook** (Michigan State University Land Policy Institute)

» **How to Create a Parklet** (AARP)

» **How Facade Improvement Programs Can Benefit Your Community** (PlannersWeb)

Programming: Animating the Neighborhood

Who is responsible: planners, health partners, developers, business owners, and community members

Regular programs and events can attract locals from the neighborhood and surrounding areas to experience a corridor or community in new ways. Activities that are convenient, frequent, dynamic, and fun help create a healthier and more vibrant community. Build new programming on existing programming with local community organizations, business improvement districts, municipalities, or similar partners.

Special off-season activities should be implemented to keep the momentum going throughout the year. In addition, vacant parcels can be used to host programs and workshops before new development occurs, and permanent spaces can be created in the aftermath of **successful** events. Focusing events around central points of a corridor, like historic buildings or an already vibrant node, can help set a memorable backdrop for the event and remind attendees about the features that make the neighborhood unique. Pop-up demonstrations can help introduce the community to potential design strategies that could improve the health and safety of the neighborhood or corridor.

Aim to host at least one event from each category in the table on a monthly or quarterly basis to promote the physical health and well-being of residents and visitors.

Programming Ideas for Healthy Corridors

Social Cohesion	Environmental Stewardship

» Design events to embrace the diversity of the neighborhood and the surrounding community across different generations, genders, and ethnicities.
» Examples: at daytime festivals, vacant spaces, plazas, or night markets,
  • plan group activities like ice breakers or conduct **community service** activities;
  • organize demonstrations/lessons on local literature, dance, exercise, art, culture, food, gardening, or music.
	» Design events to mitigate environmental hazards to health, safety, biodiversity, and climate change.
	» Examples include **cleanup** events, **pop-up parks**, community gardening projects, nature walks, **environmental justice** workshops, or farmers markets.

Transportation	Economic Opportunity
» Design events to promote equitable access and awareness of sustainable modes of transportation. » Examples include pop-up demonstrations of **bike lanes**, **bus-only lanes**, or **walking paths**; or walking, biking, or transit tours of local or historic sites.	» Design events to promote financial literacy and access to stable employment » Examples include job fairs, **small business training**, **accessory dwelling unit** tours/workshops, or financial literacy training.

Additional Resources

Guides for Activating Vacant Land:

» **How to Create a Successful Pop-Up Shop** (Better Block Foundation)

» **Building American Cities Toolkit** (Center for Community Progress)

» **Tactical Urbanism 2: Short-Term Action, Long-Term Change** (Street Plans Collaborative)

» **Living Lots NYC** (596 Acres, New York City)

» **Grounded in Philly** (Garden Justice Legal Initiative, Philadelphia)

» **LA Open Acres** (Community Health Councils, Los Angeles)

Guides for Activating Streets and Brownfields:

» **Open Streets Project** (Street Plans Collaborative)

» **What Does a Protected Bikeway Look Like?** (Bikeways for Everyone)

» **Environmental Justice Activity Collection** (Carlton College InTeGrate)

Infrastructure Overhaul

A THRIVING, HEALTHY CORRIDOR CAN GROW when the necessary infrastructure is in place to support daily activities and art, culture, entertainment, travel, and recreational opportunities for all users. To create a healthy corridor, design, planning, and engineering standards must be aligned.

Complete Streets is a term for policies and standards that ensure that users of all abilities, ages, ethnic backgrounds, and genders feel safe and invited on the street, whether they are biking, walking, wheeling a wheelchair, roller skating, driving, or taking public transit.

Infrastructure Design for All Users

Who is responsible: planners, health partners, developers, business owners, and community members

A significant percentage of our nation's low-stress streets—calm enough for all modes of travel—have been lost to arterial roads that are designed to help cars go further faster.[1] Mapping the level of traffic stress (LTS) is a way to find gaps in the roadway network for each type of user, depending on his or her degree of tolerance for high-stress traffic situations. The language of "stress" and "safety" can help guide discussions on otherwise controversial issues such as traffic speed, parking, and block length.

Online geospatial data platforms, such as the platform used in **Montgomery County**, Maryland, can help stakeholders understand—through audio and visual means—what gaps in connectivity and access exist on their corridor. Making these online tools open source and freely available is critical to empowering all stakeholders, regardless of age or expertise, so that they can add, amend, monitor, and evaluate their corridor as it redevelops. On a larger scale, this data can be used to inform technical processes, such as cost/benefit analyses and **travel-demand modeling**, which influence budgeting, planning, and accountability agendas.

The safety concerns of motorists, bicyclists, and pedestrians alike can be balanced and addressed through infrastructure improvements that use measures which prevent speeding, shorten distances between safe crossings, and increase visibility. The chart below includes a summary and description of the benefits and potential design features of some of these measures.

Types of Infrastructure Design to Improve Safety for All

Curb Extensions	Marked Crosswalks	Signal Timing	Parking Zones
» Align pedestrians with the parking lane to increase visibility. » Reduce street-crossing distance for pedestrians. » Minimize curb radii to encourage slower turning speeds. » Can be created as a demonstration project with low-cost bollards, epoxied gravel, striping, bioswales, or street furniture.	» Help pedestrians move safely, predictably, and conveniently across roadways. » Can be made high-visibility, with longitudinal bars or high-contrast pavement (or both) to be more detectible by drivers than standard transversal lines alone. » Ideally located with traffic controls every 200 feet (60.96 m), with pedestrian refuge islands or medians as needed.	» Leading intervals give a three- to seven-second head start to bicyclists or pedestrians (or both) to avoid conflicts with turning traffic. » Signal cycles shortened to 60 to 90 seconds provide pedestrians with consistent crossing opportunities and reduce delays for motorists on side streets. » How-to: fixed-time traffic signals can be coordinated to reward motorists traveling at the speed limit with a series of green lights as they travel the corridor.	» Back-in, angled parking increases the visibility of pedestrians and cyclists while narrowing the roadway to calm speeding traffic. » Buffered parklets can take over parking zones and can be designed to be flush to the sidewalk; they can contain seating, landscaping, or bicycle parking (or all of the above) to increase foot traffic.

Separating Lanes	Sidewalk Fixtures	Landscaping	Utilities
» Bus rapid transit (BRT) lanes prioritize bus travel and are often painted red, with bus stations at-grade for efficient boarding and alighting. » Protected bike lanes lined with landscaping, bollards, curbs, or parking zones enhance the safety, comfort, and mobility of the entire road network. » Loading zones for trucks, rideshare vehicles, and taxis, should be dedicated during off-peak hours and can be offset from traffic with curb extensions.	» Lighting creates safety at night and can be designed to enhance the area's character during the day; focus brighter lighting in places where people linger, such as transit stops, building entrances, and public spaces. » Benches for rest and socializing in the corridor create a barrier for pedestrians against vehicular traffic. » Curb ramps and cuts that meet Americans with Disabilities Act standards should always be included in infrastructure redevelopment plans; curb cuts can also be placed to allow stormwater filtration into rain gardens. Surface-applied **epoxies** reduce costs for curb ramps.	» Trees and rain gardens calm traffic by making the street appear narrower; they also provide shade, filter pollution, shelter wildlife, can feature decorative lighting, and help combat the urban heat-island effect. » Trench drains covered by a metal grating can be installed over the existing stormwater catch basin to avoid relocation costs. » Permeable pavement allows stormwater to drain to the compacted subbase of the road to support greenery, which calms traffic and provides shade.	» Undergrounding utilities allows street trees to grow unobstructed, reduces clutter in the corridor's view shed, reduces safety risks associated with damaged or downed wires, and reduces the amount of maintenance needed on the utility system.

Additional Resources

General Infrastructure Guidelines and Standards:

» **Complete Streets in the States: A Guide to Legislative Action** (AARP)

» **Landscape Performance Series** (Landscape Architecture Foundation)

» **Designing for Different Times of Day** (National Association of City Transportation Officials)

» **Urban Street Design Guide** (National Association of City Transportation Officials)

» **Transit Street Design Guide** (National Association of City Transportation Officials)

» **Urban Bikeway Design Guide** (National Association of City Transportation Officials)

» **Manual on Uniform Traffic Control Devices** (Federal Highway Administration)

» **Planning & Design** (Pedestrian and Bicycle Information Center)

» **Out of Sight, Out of Mind 2012: An Updated Study on the Undergrounding of Overhead Power Lines** (Edison Electric Institute)

Guidelines for Specific Cities:

» **Street Design Manual** (New York City Department of Transportation)

» **Active Design: Shaping the Sidewalk Experience** (New York City Department of City Planning)

» **Design Guidelines** (Portland Bureau of Transportation)

» **Utilities Undergrounding Process** (City of San Diego)

Zoning Code Reforms for Healthier Infrastructure and Land Use

Who is responsible: planners, health partners, and policy makers

One goal of a healthy corridor is to create a vibrant, mixed-use, and walkable street grid, with a street wall that encourages walking and biking rather than showcasing parking lots. Often, local policies, including zoning, are not complementary to this goal. Zoning reforms that address the corridor as a connector, rather than as a divider of neighborhoods, should be assessed locally and prioritized. Strategies for zoning reforms that improve infrastructure and land use in ways that promote health are detailed below.

Zoning-Based Reform: Strategies and Examples

Strategies for Zoning-Based Reform		
Form-Based Codes	Overlay Zoning	Density-Bonus Zoning
» These regulations use physical form, rather than separation of uses, as the organizing principle of design and development. » They can allow developers to get faster-than-normal approval of their plans. » They have a lower risk of residents opposing the project, and they may be able to increase the density of the project. » They can incorporate requirements for affordable housing, public space, mixed-use, pedestrian upgrades, improved streetscapes, and other public amenities.	» This is a special zoning district, with regulations that establish stricter standards and criteria for properties than those of the existing zoning district, or with regulations that establish additional standards and criteria for properties. » It can protect specific features such as historic buildings, wetlands, steep slopes, and waterfronts. » It can promote specific development projects such as mixed-used developments, waterfront developments, housing along transit corridors, or affordable housing.	» This allows developers to build more units or taller buildings than normally permitted in exchange for public benefits. » Community benefits and affordable housing can be financed through in-lieu fees or included within the new project.
Examples of Zoning-Based Reform		
» Arlington, Virginia: **Columbia Pike** redeveloped a commercial corridor into a mixed-use residential district using form-based codes.	» Los Angeles, San Francisco, and New York City: these cities have modified their zoning codes to **incentivize the sale of fresh produce** over fast food.	» Arlington, Virginia: the county of Arlington uses a **variety of zoning tools,** including density bonuses and height exemptions, to incentivize developers to increase affordable housing.

Additional Resources

» **Resources** (Form-Based Codes Institute)

» **Flexible Zoning Techniques and Growth Management Tools** (American Planning Association)

» **Grocery Store Attraction Strategies: A Resource Guide for Community Activists and Local Governments** (PolicyLink and LISC)

» **Healthy Retail: A Set of Tools for Policy and Partnership** (ChangeLab Solutions)

» **Zoning for Bicycle Parking** (New York City Department of City Planning)

» **Car Sharing Zoning** (New York City Department of City Planning)

» **Zoning Toolkit** (New York City Department of City Planning)

Preserving Housing Affordability in Arlington County, Virginia

The initial form-based code (FBC) for Columbia Pike in Arlington County, Virginia, adopted in 2003, focused on the commercial centers of the corridor; a second FBC adopted in 2013 focused on the neighborhoods. This second FBC was born out of a 2012 Neighborhoods Area Plan that focused on areas of multifamily housing along the corridor. "The neighborhood plan set the vision and goals for the neighborhoods," said Melissa Cohen, affordable housing development specialist for Arlington County. "The Neighborhoods Form-Based Code [NFBC] was a tool to help implement this vision."

The plan also set the ambitious goal of maintaining the estimated 6,200 existing market-rate affordable units along the corridor through either preservation or new construction. An existing-conditions analysis, conducted during the research phase of the Neighborhood Area Plan, showed that there would likely be a threat to the supply of market-rate affordable housing.

The affordable housing units along the corridor have different requirements for preservation or redevelopment. Some housing complexes, located in the NFBC "conservation areas," have been designated for conservation to lock in affordability and preserve historic resources; these complexes are eligible for specific planning and financial resources designated for both renovation and preservation. In other housing sites along the corridor, redevelopment is allowed. However, under the NFBC, the developer must provide a certain percentage—20 to 35 percent—of net new units as committed affordable units. This percentage, determined through research and analysis, recognizes that the NFBC requires developers to make other costly improvements, such as to parking facilities or building architecture.

The NFBC anticipates that market pressure will increase as Columbia Pike is redeveloped, and it put rules in place to guide the way changes should occur. "The community and elected officials were very interested in preserving 100 percent of the existing affordable housing along Columbia Pike," said Jennifer Smith, principal planner at Arlington County. "We knew there would be new market-rate housing due to increasing density, but we wanted to ensure a mix of affordable housing as the Pike continues to change."

For more information on the Neighborhoods FBC and affordable housing requirements, visit **https://projects.arlingtonva.us/ neighborhoods/neighborhoods-form-based-code/**.

For more on the redevelopment of Columbia Pike, download the full report *Building Healthy Corridors: Transforming Urban and Suburban Arterials into Thriving Places*.

Public Bike-Sharing Programs

Who is responsible: planners, health partners, transportation advocates, and policy makers

About **1,000 cities** throughout the world have public bicycle-sharing systems; these cities make nearly 2 million bicycles available for use.[2] Of those, 70 cities have 9,400 *pedelec* bicycles—electricity-assisted bicycles that help with hilly areas, strenuous rides, or long distances.[3]

How Bike-Sharing Systems Work:

» **STEP 1:** Unlock a bicycle using a transit pass, a key tag, or a key fob from an unmanned, often solar-powered, bike-share station.	» **STEP 2:** Return your bicycle to any bike-sharing station near your destination, typically within 30 to 60 minutes to avoid paying additional fees. The bike will then be available for the next customer.	» **STEP 3:** Arrive at your destination. For longer trips, continue your journey on public transit, rideshare, car share, paths, or trails.

Bike sharing gives users the flexibility of going from point A to point B without having to make a return trip. Spacing bike-share stations within 1,000 feet (305 m) of each other can encourage riders to make several trips throughout the day. A flat fee for unlimited rides (on an annual, monthly, weekly, or daily basis) encourages frequent bicycle use. Allowing users to pay as they go in cash or in monthly credit card payments at **commuter stores**, key fob **vending machines**, or **convenience stores** also increases the affordability of the system. Integrating bike sharing within a **transit system** and providing employee **benefits packages** and **smart-phone access** can increase system use and affordability.

Physicians can implement a "**Prescribe-a-Bike**" program so that patients can manage certain chronic health issues with regular physical activity. Law offices, housing authorities, social service providers, and public schools have also offered discounted bike-sharing **memberships** or **group rides** (or both) to make riding affordable, social, safe, and convenient. Station design and bicycle basket art contests can engage youth and encourage use. To encourage bike travel, property owners and residents alike can request bike-sharing stations and bicycle racks through **online or mobile maps** or by using traditional telephone 311 hotlines. Some bike-sharing systems offer helmets for purchase at a discount or for rent at vending machines or convenience stores. Workforce development programs and unions can help increase bike-sharing **employment opportunities** for people of color.

After nearly half a century of bike-sharing trials and implemented systems worldwide, research studies have demonstrated that bike-sharing programs positively affect the local economy, the environment, resident health, society, and traffic,[4] as shown through the selected statistics below.

The Impact of Bike Sharing on Municipalities Worldwide

Social Equity	Environment	Economy	Safety and Health
» In London, bike-sharing ridership doubled from 6 to 12 percent in low-income areas between 2010 and 2013 after changes in station siting.[5] » In Boston, over 250 community organizations helped low-income users—53 percent of which were people of color—gain access to 778 subsidized $5-annual memberships to bike sharing. Of these users, 49 percent renewed their membership the following year.[6]	» In Washington, D.C., bicycling as a whole increased at twice the national rate (32 percent versus 15 percent) within two years of bike-sharing implementation.[7] » Bike-sharing programs have contributed to less automobile use (7 to 21 percent) in five U.S., U.K., and Australian cities.[8]	» In Washington, D.C., a 2 to 3 percent decrease in traffic congestion was seen in areas where bike-sharing stations were located. » In all, 66 percent of bike-sharing users reported traveling to a destination associated with consumer spending (such as a food-related or entertainment business); of those, 63 percent planned to spend $10–$49, and 30 percent planned to spend more than $50, according to one Washington, D.C., study.[9]	» As of January 2016, there have been low injury rates and zero fatalities associated with public bike sharing in the United States, making bike sharing statistically safer than using private bicycles.[10] » According to London estimates, bike-sharing users gained 74 million more minutes of physical activity than non-bike-sharing users.[11]

Additional Resources

» **Employer Commuter Benefits Toolkit** (goDCgo)

» **The Case for Making Bike-Share Membership an Employee Benefit** (CityLab)

» **How We'll Know When We're Getting Bike Equity Right** (Next City)

» **The Bike-Share Boom Timeline** (CityLab)

» **The Bike-Sharing Blog** (MetroBike LLC)

» **Pursuing Equity in Pedestrian and Bicycle Planning** (Federal Highway Administration)

Evaluating Corridor Changes and Performance: "Vision Zero" and Beyond

Who is responsible: planners, health partners, transportation advocates, and policy makers

Vision Zero policies seek to ensure that roadways are made safer through design, planning, and engineering decisions that limit or eliminate death or severe injury from traffic accidents. Nearly 1.3 million people each year die in traffic accidents, while 20 to 50 million more people sustain injuries that are an increasing cause of disabilities worldwide.[12] Vision Zero underscores the importance of the "five *e*'s of infrastructure"—engineering, education, equity, evaluation, and enforcement—in preventing traffic accidents and injuries for all users.

Many U.S. cities, including Seattle, Chicago, New York, and Los Angeles, have already adopted the Vision Zero approach. In New York City, where major engineering changes were made, traffic deaths have decreased by 34 percent, which is twice the rate of areas without these improvements.[13] Sweden has also made engineering and policy changes and since 1970 has seen an 80 percent reduction in road deaths, even as cars and miles driven have doubled.[14] In contrast, Los Angeles, a city without such safety frameworks, has not seen a significant decrease in severe injuries or deaths in traffic accidents over the last ten years.[15]

When evaluating the success of Vision Zero policies, it is important to monitor all modes of travel. Travel by modes other than automobile may appear minuscule, but research shows that there is latent consumer demand for infrastructure that prioritizes alternative modes of travel, such as walking and biking.[16] Practices and policies can inadvertently undercount and underinvest in shorter, nonmotorized trips by measuring only travel between large traffic analysis zones (TAZs) or by not counting "linked trips" that start or end with walking, even if that walking comprises a greater share of the trip.

When short trips are included, walking is the second most common mode of travel after driving, recorded at 10 percent of total travel in 2001.[17] Those who walked daily to transit or who walked for recreation or other purposes averaged the surgeon general's recommended 30 minutes of exercise per day.[18] In contrast, conventional, automobile-dependent cities face increased traffic and parking congestion, higher accident rates, health problems related to sedentary lifestyles, sprawling land use, and environmental pollution.[19]

Additional Resources

» **Evaluating Active Transport Benefits and Costs: Guide to Value Walking and Cycling Improvements and Encouragement Programs** (Victoria Transport Policy Institute)

» **Vision Zero: Learning from Sweden's Successes** (Center for Active Design)

» **Vision Zero Network**

Who Pays? Financing and Policy for Equitable and Inclusive Redevelopment

FUNDING ANY LARGE-SCALE REDEVELOPMENT PROJECT that requires changes to be made over many years is complicated and typically requires many sources of financing and revenue. This section explores some of the financing options available to public and private sectors.

Having a mix of housing and commercial properties that are appropriate for a range of incomes is critical to keeping a vibrant mix of residents in a neighborhood. Housing and retail-space costs in many cities are rising, and as a neighborhood or corridor revitalizes, property values are likely to rise also. Working with public and private sector leaders to develop policies that allow housing and commercial property to remain affordable will provide safeguards against displacement. Preserving affordable properties can also reduce the amount of stress that existing residents and small business owners may feel from paying a high percentage of their wages for rent. Reduced stress can lead to improved mental and physical health.

Additional Resources

» **The Cost of Affordable Housing: Does it Pencil Out?** (The Urban Institute)

» **Transportation for Older Adults Requires a Tapestry of Funding Sources** (AARP)

» **Building Better Budgets** (Smart Growth America)

» **Reaching for the Future: Creative Finance for Smaller Communities** (Urban Land Institute)

User Fee–Based Financing Strategies

Who is responsible: planners and policy makers

The table below lists a variety of user fee–based financing strategies used by cities across the country. These strategies include deferred special assessment districts, land value capture, bond proceeds, and utility and transaction fees.

User Fee–Based Financing: Strategies and Examples

Strategies for User Fee–Based Financing			
Deferred Special Assessment Districts	Land Value Capture	Bond Proceeds	Utility and Transaction Fees
» These use local fees, often based on square footage, assessed per property owner to finance neighborhood-specific public investments. » The city apportions the cost of the public benefits among properties in proportion to a property's share of the special benefits. » Property owners can defer paying the assessments with interest until they sell their property; this deferment results in a net capital gain as property values increase over time.	**Split-Rate Taxation** » taxes a parcel of land at a higher rate than its buildings, » creates an incentive to develop on high-value land (such as land with public transit access), and » provides a disincentive for speculation on the outskirts of an urban area (i.e., waiting for an empty parcel to appreciate over time). **Tax Increment Financing (TIF)** » All property tax growth above a predefined base amount can be used to fund public and private redevelopment projects in that district.	» These are secured through identified revenue streams such as • toll roads, • fuel taxes, • air rights sale or lease, • school zone speeding fines, • severance fees (from the extraction of coal, etc.), • DMV fees (driver's licenses, vehicle registrations, titles, and custom license plates), • gambling/lottery taxes, • highway use taxes (collected instead of sales tax on vehicles), and • naming rights for public facilities.	**Transit Operations Fee** » Utility bills have a nominal "transit operations fee" added to them each month, which goes to pay for maintenance and operations of the roadway or public transportation infrastructure that directly benefit those ratepayers. **Real Estate Recordation Tax** » This tax is paid by the seller on the transfer of official documents or other property. » It can be used for affordable housing, open space development, and other public benefit purposes.

Examples of User Fee–Based Financing			
Deferred Special Assessment Districts	Land Value Capture	Bond Proceeds	Utility and Transaction Fees
» Old Town, Pasadena: a former "skid row" of homeless encampments and boarded-up businesses was revitalized with a property-based **assessment district** and a **parking benefit district.** » Venice Beach, California: a deferred property-based assessment was used to redevelop the city's **canals and public services**.	» Pittsburgh, Pennsylvania: the tax on land values was increased to six times the rate of the city's tax on buildings. Office and residential development grew substantially even as the city's steel industry was struggling. Development within the city was faster than in the suburbs, unlike the development in much of the United States.[20] » State of Michigan: TIFs were used to create a **corridor improvement district (CID)** to fund improvements on corridors outside of the downtown core.	» London, England: cordon pricing, a toll paid by motorists who drive into central London, has generated $300 million annually for public transportation. Traffic congestion has decreased by 10 percent, and cyclists have increased by 28 percent in the downtown area. Pollution (nitrogen oxide and carbon dioxide) has fallen as well. The number of traffic collisions has fallen by 40 percent over a ten-year period.[21]	» Corvallis, Oregon: a city of only 54,000 people pays for its fare-free public transit for residents and visitors by charging households a monthly transit operations fee, payable with the regular water bill, which amounts to $3.80 on average.[22] » Fairfax, Virginia: $1 for every original and corrected deed in the county is set aside for open space preservation (**§58.1-817**).

Additional Resources

» **Tax Increment Financing: Tweaking TIF for the 21st Century** (*Urban Land* magazine)

» **Recommended Practices: Effective Tax Increment Finance Program Management** (Council of Development Finance Agencies)

» **Frequently Asked Questions about Improvement District Programs** (State of New Jersey Department of Community Affairs)

» **Getting Started: Using the Main Street Approach** (National Trust for Historic Preservation)

» **State Revenue Sources that Fund Bicycling and Walking Projects** (Advocacy Advance)

Development Transaction–Based Financing Strategies

Who is responsible: planners and policy makers

A variety of strategies for development-based financing, including development cost levies, community amenity contributions, and joint development agreements, are outlined in the table below.

Development-Based Financing: Strategies and Examples

Strategies for Development-Based Financing		
Development Cost Levies (DCLs)	**Community Amenity Contributions (CACs)**	**Joint Development Agreements**
» These are fees that all new developments must pay (even if no new zoning is required) to mitigate actual or anticipated growth. » When levied on a square-foot basis, larger units contribute a proportional share of community benefit.	» These provide public benefits, in-kind or in-lieu, in accordance with the neighborhood community plan. » Energy efficiency, such as Leadership in Energy and Environmental Design (LEED) certification, can be required as a baseline community benefit. » They are delivered to the municipality along with the pro forma before rezoning.	**Public/Private Partnerships (PPPs)** » These partnerships occur when local governments, community groups, nonprofits, and private/for-profit entities partner in the redevelopment process, including the effort to secure funding. **Land Banking** » Government entities or nonprofit corporations that group together "problem properties" (vacant, abandoned, or tax-delinquent properties), eliminate liabilities and transfer them to new, responsible owners. » There are **over 120** land banks throughout the United States.
Examples of Development-Based Financing		
Development Cost Levies (DCLs)	**Community Amenity Contributions (CACs)**	**Joint Development Agreements**
» Vancouver, Canada: developer contributions led to 4,200 affordable housing units, 3,400 licensed child care spaces, and 62 miles (100 km) of bikeways over the last ten years.[23]	» Vancouver, Canada: community centers, daycare centers, libraries, parks, and cultural facilities have often been built through CACs. Development charges for each property type are based on the projected costs of roads, sanitation, water, and police per square foot of development.[24]	» Denver, Colorado: the Denver **Regional Transportation District** has used public/private partnerships to implement numerous light-rail and commuter-rail transit projects.

Additional Resources

» **Building American Cities Toolkit** (Center for Community Progress)

» **Ten Principles for Successful Public/Private Partnerships** (Urban Land Institute)

» **Successful Strategies for Effective Public-Private Partnerships** (National Real Estate Investor)

Transportation-Based Financing Strategies

Who is responsible: planners and policy makers

To capture the value of new private development and parking, a municipality can codify tiers of contributions and regulations to guide and finance corridor redevelopment. Helpful strategies include disabled placard reform, VMT fees, parking benefit districts, and public works coordination.

Transportation-Based Financing: Strategies and Examples

Strategies for Transportation-Based Financing			
Disabled Placard Reform	Vehicle-Miles Traveled (VMT) Fees	Parking Benefit Districts	Public Works Coordination
» Two-tiered pricing for disabled placards can fund sidewalk and crosswalk repair or paratransit (or both). » Tiered pricing based on the severity of the disability, using a meter or mobile device, would prevent disabled placard abuse.[25]	» Transportation impact studies for a new development project must examine the project's contribution to VMT and traffic safety in assessing the project's liability risk and environmental impact.	» Revenue from parking meters can be dedicated to improving public services for that area. » Dynamically price parking for a goal of 85 percent occupancy (two to three open spaces per block) to reduce the number of cars cruising for parking: a major source of emissions. » Shared parking lots between businesses and institutions increase parking supply and turnover in peak and off-peak hours.	» Surface repaving or rehabilitation efforts by public works or historic preservation departments can be used to maximize efficiencies and cost savings when implementing infrastructure improvements, such as bike lanes or curb extensions. » Coordination can be done through in-person, multistakeholder coordination meetings and software visualizations such as **Envista**.
Examples of Transportation-Based Financing			
Disabled Placard Reform	Vehicle-Miles Traveled (VMT) Fees	Parking Benefit Districts	Public Works Coordination
» Michigan: the state decreased the number of disabled placard requests from 500,000 to 10,000 using a two-tiered approach to disabled placards. Illinois and Virginia have similar regulations.[26]	» California: a new SB-743 law has instituted VMT and added safety considerations into its state environmental review process.[27]	» **Ventura, California**: the city used its meter revenue to fund public wi-fi, lighting, planters, and community policing. **Crime** subsequently decreased by 40 percent, and there was a 15 percent decrease in calls for service. » San Francisco, California: the city reduced citations by 12 percent, emissions by 30 percent, and cruising for parking by 43 percent by dynamically pricing its meters.[28]	» Baltimore, Maryland: the city projects $900,000 in annual savings by using **Envista** software to visualize and coordinate infrastructure projects and permits across multiple departments. » San Francisco, California: the city provides an **interactive map** and **video** through Envista for the public to view multiple departments' upcoming improvement projects.

Additional Resources

» **Matrix of Illustrative Surface Transportation Revenue Options** (American Association of State Highway and Transportation Officials)

» **Parking Reforms** (Donald Shoup)

» **Map-Based Infrastructure Coordination** (Envista)

Grants and Loans from the Public Sector

Who is responsible: planners, health partners, and policy makers

Many nonprofits and local, state, and federal governments offer grants for specific implementation projects. Increasingly, funding is being awarded to projects that consider the health of the community. Below are some links to current grant opportunities that may be applicable to corridor redevelopment projects.

Grant- and Loan-Based Financing: Strategies and Examples

Strategies for Grant- and Loan-Based Financing	
Grants	Loans and Tax Credits
Local Planning Assistance Grants » These come from state departments of transportation and help fund feasibility and planning studies for active transportation. » Technical assistance for asset mapping can be obtained from **EPA Citizen Science,** the **National Science Foundation**, and the **CDC Division of Community Health**. **HUD's Home Program** » The program issues grants to state and local governments to implement strategies that increase homeownership and affordable housing opportunities for low- and very low-income residents (a 25 percent local match is required). **Transportation Planning Grants** » These grants from various federal agencies for capital investments, operations, technical assistance, financing, and planning are maintained by **Reconnecting America**. **Foundation Grants** » Nonprofits can apply for grants to fund various initiatives. The **Center for Nonprofit Excellence** maintains a database of over 2 million grants. » The **National Endowment for the Arts** and the **Kresge Foundation** support arts and cultural initiatives and asset mapping. The **Robert Wood Johnson Foundation's** grants support health-focused initiatives.	**Title I (Property Improvement) Loan** » This loan is for light or moderate rehabilitation of structures and the construction of nonresidential structures on the property. **203(K) Rehab Mortgage Loan** » This loan allows homeowners to finance the **rehabilitation of their home**, and it allows homebuyers to finance the purchase and rehabilitation of a home through a single mortgage. **Low-Income Housing Tax Credits (LIHTC)** » This tax credit allows an investor to obtain a federal tax credit equal to a percentage of the cost of developing low-income units in a rental housing project. » The tax credit is given only when "set asides" with strict income requirements are met by tenants. » The credit is administered by state housing finance agencies. **Microloans** » Certain nonprofits and small businesses can apply for small loans up to $50,000 to help start and expand their business. The **Small Business Administration** maintains a database of such lenders. » This type of loan can be complemented by regulations allowing pop-up art galleries, workshops, and temporary storefronts for startup businesses.

Examples of Grant- and Loan-Based Financing	
Grants	Loans and Tax Credits
HUD's HOME Program » This program has been used for tenant-based rental assistance, housing rehabilitation, assistance to homebuyers, new construction of housing, site acquisition, site improvement, demolition, relocation, and other activities related to the development of nonluxury housing.	» In **Adelaide, Australia**, startup businesses can occupy vacant storefronts rent free with a 30-day rolling lease; loans and tax credits are given to revitalize urban spaces and to provide entrepreneurs with new opportunities. These loans and tax credits also provide commercial leasing workshops for entrepreneurs to learn negotiation strategies. **Storefront App** » Startup businesses, special events, and art galleries can use the **Storefront** mobile app and website to find pop-up opportunities in the United States. **FHA Loans** » These loans are used for weatherization, new heating, ventilation, and air-conditioning (HVAC) systems, and other energy efficiency improvements. **LIHTC Developments** » These account for an estimated 90 percent of all affordable rental housing created in the United States.

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