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From: Carey MM <careymm@sunflower.com>
Sent: Friday, May 04, 2018 10:33 AM
To: David Cronin
Cc: Amanda Sahin
Subject: Mass. St. planning
Attachments: barker-neighborhood-report-brief.compressed.pdf

Hi David,

I think some of the Transp. Comm. members have not seen the attached. Would you consider attaching it to agenda for Monday's mtg re Agenda item # 3? The The report addresses reconfiguration and right sizing of Mass. St, but further south than 14th. That proposal was made on p. 25, I think, although the attached copy is incomplete. You may have this report in its complete form in your files.

Thanks for your thoughtful consideration.
See you Monday!

Carey



Walkability and Complete Streets: Opportunities for the Barker Neighborhood of Lawrence, KS

Prepared by the Walkable and Livable Communities Institute for AARP and AARP Kansas | July 2014

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Photos on the cover depict scenes in and near the Barker neighborhood as observed by the AARP and WALC Institute project team in July 2014. This page, to the right: with several traffic-calming projects already implemented, the Barker neighborhood is poised to take the next steps toward walkability and "complete" streets.

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The Kaw Valley OWL

The AARP and WALC Institute *Active Living Workshop*

Various trends are changing the projections for future travel demands in North America; that is, they are changing our understanding of the type of transportation systems and neighborhoods people want now and will want in the future. Aging populations, rising fuel prices, growing traffic problems, increasing health and environmental concerns, and changing consumer preferences are all increasing demand for active modes of transportation, such as walking, cycling and public transit.

The benefits of active transportation, placemaking and "complete" streets—herein, collectively referred to as "walkability"—are numerous. They improve public health and reduce healthcare costs. They contribute to a sense of "place" and community, and reduce the need for parking spaces. They help alleviate pressure on roadways that are nearing saturation and have very little "grow room." In fact, walkability is the lowest-cost way to keep car dependency from growing and, therefore, keep motorized traffic moving. Beyond that, more than 25 percent of all daily trips made in the U.S. are within walking distance and 60 percent are within bicycling distance. Having the option to walk or bike—or move naturally—just makes sense. It also is particularly important to aging populations, knowledge workers, Millennials and other groups that often make up the target demographics for city-building efforts.

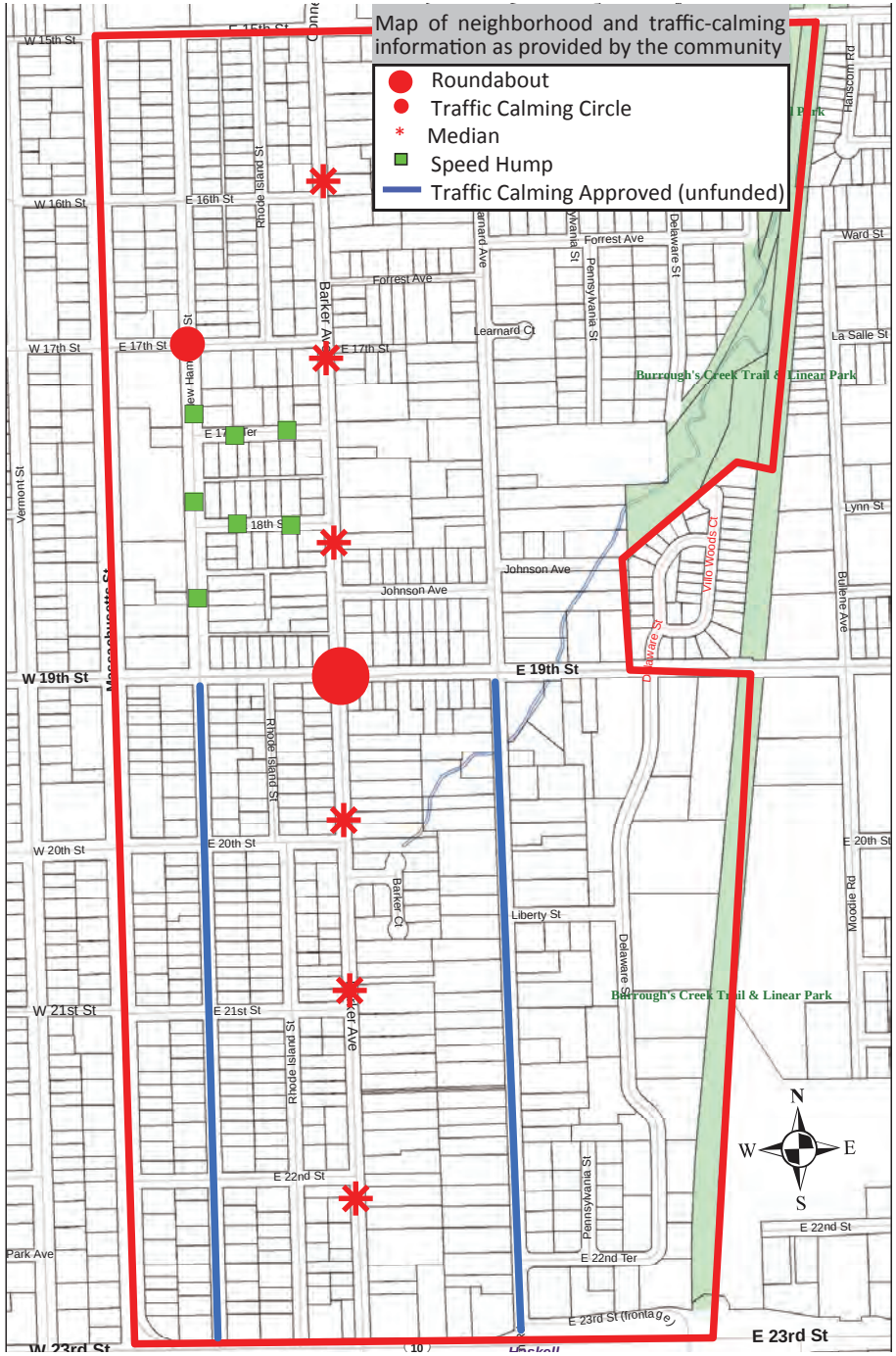
The walkability and livability of a community—whether urban, suburban or rural—is heavily influenced by land-use and transportation planning, design and policies. Where walkability is supported through policies, programs and projects that favor active living, the entire community benefits.

As described in other parts of this report, it will be the rebuilding, re-purposing, retrofitting and infilling of land and infrastructure in places like the Barker neighborhood and surrounding areas—along with the redesign of critical intersections and corridors throughout town—that will improve prosperity, health and well-being.

Engaging Community Members in a Meaningful Way

Achieving such goals anywhere in the country, however, requires that community members are engaged in a meaningful way in assessing their built environment and prioritizing changes. A group of community members who are vested in this way helps build further support for the plans to be adopted and projects to be undertaken.

Toward that end, AARP and the WALC Institute have developed the Active Living Workshop to engage communities in making their streets and neighborhoods more walkable, livable, healthy and sustainable. The goal of the workshop is to build capacity by promoting a shared language amongst residents, government staff and elected officials; to illustrate through examples and audits how walkability and livability benefit a community and how they can be achieved; and to inspire each participant to become involved in the movement towards active living.



An Active Living Workshop was held in Lawrence, KS on July 28 and 29, 2014 to focus on opportunities in and surrounding the Barker neighborhood, an older residential area about one mile south of downtown and southeast of the University of Kansas campus. The workshop was hosted by AARP Kansas with support from the Barker Neighborhood Association and local community volunteers.

The neighborhood spans roughly a half-mile east to west, and about a mile north to south. It includes about 750 homes. The neighborhood association has helped bring residents' voices to City Hall in recent years, resulting in part in several recently built traffic-calming projects. (See the inset map provided by the community.)

About 70 people—mostly neighborhood residents—participated in the Active Living Workshop events the evening of July 28 at Babcock Place, a senior-housing center in the Barker neighborhood. The evening included an educational presentation on walkability and walking audits led by WALC Institute team members Dan Burden and Kelly Morphy. Lawrence Mayor Mike Amyx also attended and spoke briefly with the residents.

Workshop activities on July 29 were based at Lawrence High School, which is across Massachusetts St. from the Barker neighborhood. Many neighborhood residents and local advocates returned, along with several officials from the City of Lawrence, including planners, traffic engineers, and a police officer.

Tuesday's schedule included an in-depth walkability presentation and initial recommendations, a bus tour of the neighborhood with several stops to get out and walk, and a small-group planning/prioritization activity.

Why Walkability Matters

Throughout the country, we have applied advanced engineering to move *more* cars and to move them *faster*. The result too often has been streets that accommodate cars but deter people from active modes of transportation such as walking, biking and using transit. Land uses like strip malls, cul-de-sacs, poorly sited schools, and single-use zoning tend to compound the problem and perpetuate a dependency on automobiles. Further, transportation engineering often places focus on vehicle mobility at the expense of others. These factors matter greatly because the built environment plays a significant role in health and well-being by either encouraging or discouraging physical activity.

Complete Streets are designed to serve everyone: pedestrians, bicyclists, transit riders, and motorists, regardless of age or ability....

- From the Lawrence Complete Streets Policy

Today, two out of three American adults 20 years and older is overweight or obese. In 2008, about half of all adults 18 years and older in the U.S. had at least one of six chronic illnesses: cardiovascular disease, arthritis, diabetes, asthma, cancer or chronic obstructive pulmonary disease (COPD).

While we know that physical activity is good for us, 60 percent of Americans do not meet the daily recommendations set by the Centers for Disease Control and Prevention. Yet, people who have sidewalks in their neighborhoods reported more minutes of recreational walking. And adults living in highly walkable neighborhoods engage in 41 minutes more of total physical activity per week than those in low-walkability neighborhoods.

Further, consider that:

- A study in the *Journal of the American Planning Association* in 2006 found that for every five-percent increase in walkability, a community could expect more than a 30-percent increase in "physically active travel" and nearly a quarter-point reduction in individual body mass index, which is a common indicator for obesity and health. The increase in walkability was also correlated with more than a five-percent reduction in air pollutants that are associated with vehicle travel.
- Analysis published in *Preventive Medicine* in 2010 indicates that installing sidewalks on all of a city's streets would increase physical activity enough to offset weight gain in about 37 percent of the population, leading to healthcare savings likely to be enough to repay the cost of installing the sidewalks.

Residents, students and visitors display a desire to use active modes of transportation in and around the Barker neighborhood of Lawrence, KS.

There are many reasons to support active living and walkability.

- Active transportation incorporates exercise into one's daily schedule and eliminates the stress of driving on congested streets.
- Health care costs are reduced when people lead active lifestyles.
- A five- to 10-mph reduction in traffic speeds increased adjacent residential property values by roughly 20 percent. Reduced traffic volumes on residential streets increases home values by an average of 18 percent.
- Active transportation infrastructure is far less expensive than building new roads and parking.
- Active transportation provides opportunities for social connections and community building.
- A 10-point increase in Walk Score increases commercial property values by 5 percent to 8 percent.
- An EPA study indicates compact infrastructure is up to 47-percent less expensive than conventional development patterns.
- Active transportation is good for tourism. In 1992, an estimated 32,500 visiting cyclists spent $13.1 million in Vermont.[23] Similarly, 680,000 visitors bicycle in North Carolina's Outer Banks yearly, generating $60 million annually. About 1,400 jobs are supported locally in North Carolina from expenditures made by bicyclists.

The built environment also reflects our social inequities. Seniors are over-represented in intersection fatalities by a factor of more than two-to-one. Seniors also are at great risk for social isolation once they lose their ability to drive. In fact, half of all non-drivers 65 years and older—about 4 million Americans—stay at home on a given day because they lack transportation.

But improved health and social equity are not the only reasons to modify the built environment to be more supportive of active transportation. Forty percent of baby boomers say they don't have enough savings for retirement. This means seniors will continue to work and transportation choices will become critically important. As the senior population grows faster than any other age group, towns that are addressing walkability are better suited to meet their needs.

When cities and towns provide equitable access to a complete transportation system, they send the message that people—not just cars—belong. No matter one's age, income, ability, or mode of transport, the place works and the benefits are tremendous. Our street design can minimize those things that halt productivity (congestion, accidents) because users know where they belong, how to navigate and how to interact with others.

In too many parts of the U.S., bicycling and walking are considered recreational activities. However, when we focus on walkability and its economic benefits, we build strong communities that are more prosperous and that work for all.

Factors improving walkability include:

- Destinations within walking or biking distance of each other, such as retail shops located near offices and housing, and schools located within neighborhoods.
- Street connectivity, ideally in a fine-grain grid without unnecessary cul-de-sacs. Also, sidewalks or trails that allow people to move comfortably and safely.
- Road widths that foster lower vehicle speeds. The wider a road or a vehicle travel lane is (or appears to be), the faster the driver tends to travel. The faster cars are traveling, the less safe and comfortable a person feels walking or bicycling.
- A sense of security and "eyes on the street." This feeling of comfort is created by orienting the homes and buildings toward the street, and providing transparency—occupied buildings and homes with windows and doors at the street level—so occupants can watch over the street.

Key Walkability Concepts

** Also, see the Active Living Toolbox attachment for a series of fact sheets by AARP and the WALC Institute addressing several of the most common misconceptions about the tools of livability.*

Active Transportation: Also known as non-motorized transportation, this includes walking, bicycling, using a wheelchair or using "small-wheeled transport" such as skates, a skateboard or scooter. Active modes of transportation offer a combination of recreation, exercise and transportation. (See Victoria Transport Policy Institute, www.vtpi.org.)

Aging in Place: Also called, "Living in Place." The ability to continue to live in one's home safely, independently and comfortably, regardless of age, income or abilities. Living in a familiar environment and being able to participate in family and other community activities. (See National Aging in Place Council, www.ageinplace.org.)

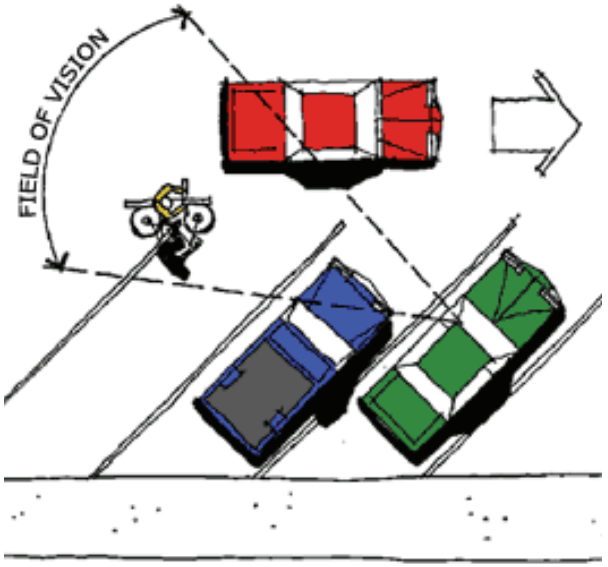
Charrette: [pronounced, "shuh-RET"] A collaborative session to solve design problems that usually involves a group of designers working directly with stakeholders to identify issues and solutions. It is more successful than traditional public processes because it focuses on building consensus. (See Walkable and Livable Communities Institute, www.walklive.org.)

Complete Streets: Roads that are designed for everyone, including people of all ages and abilities. Complete Streets are accessible, comfortable for walking and biking, and include sidewalks, street trees and other amenities that make them feel "complete." (See National Complete Streets Coalition, www.completestreets.org.)

Head-Out Angled Parking: Also called "back-in" or "reverse" angled parking, this is arguably the safest form of on-street parking. It offers multiple benefits, including creating a sight line between the driver and other road users when pulling out. Additionally, head-out parking allows the driver to load their trunk from the curb, instead of adjacent to the travel lane. And for drivers with young children, seniors or others who need extra help, the open car doors direct passengers to the safety of the sidewalk behind the car, not into traffic. The process of parking in a head-out angled spot is simple – a driver signals their intention, slows, pulls past the spot and then backs into it, which is roughly equivalent to making only the first maneuver of parallel parking.

Livability: In the context of community, livability refers to the factors that add up to quality of life, including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and culture, entertainment and recreation possibilities. (See Partners for Livable Communities, www.livable.org.)

Above: Head-out angled parking is safer for all people, including those driving, biking and walking. Below: This diagram from the City of Northampton, MA illustrates one of the benefits of head-out angled parking: a driver's ability to see oncoming traffic as they pull into the travel lane from their parking spot.



Median Crossing Island: A short island in the center of the road that calms traffic and provides pedestrian refuge. They can be six to 12 feet wide and 20 to 80 feet long. They should be landscaped with low, slow-growth ground cover, and tall trees without branches or leaves at ground height that help motorists see the islands well in advance but don't obstruct sight lines.

Mini Circles: Also called "mini traffic circles," these are intersections that navigate vehicles around a small island about eight to 15 feet in diameter that is either lightly domed or raised. When raised, a mini traffic circle should be visible from hundreds of feet away, creating the feeling of a small park in the neighborhood. The circles should be designed to reduce speeds to 15 to 18 mph at each intersection. A proper number of them will reduce vehicle speeds to 22 to 25 mph along the corridor while helping traffic flow more smoothly due to the decreased number of complete stops.

Rotaries: Also sometimes called traffic circles, rotaries are a form of an intersection that navigates cars around very large circulating islands. An entire traffic circle can be as big as a football field. And can include stop signs and signals. They are not the same as roundabouts or mini circles. Rotaries are cumbersome and complicated and can induce higher speeds and crash rates. Many rotaries in North America and Europe are being removed and replaced with the preferable roundabout.

Roundabouts: Also called "modern roundabouts," they navigate cars around a circulating island, usually up to 60 feet in diameter. Roundabouts are ideal for collector and arterial roads, and at freeway on-off ramps. They eliminate the need for cars to make left turns, which are particularly dangerous for pedestrians and bicyclists. Properly designed, roundabouts hold vehicles speeds to 15 to 20 mph. They can reduce injury crashes by 76 percent and reduce fatal crashes by 90 percent. (See the Insurance Institute for Highway Safety's website at http://www.iihs.org/research/topics/roundabouts.html) Roundabouts also can increase capacity by 30 percent by keeping vehicles moving. When installing roundabouts in a community for the first time, care should be taken to make roadway users comfortable with the new traffic pattern and to educate them about how to navigate roundabouts properly and to yield as appropriate. For more information about roundabouts, see the Federal Highway Administration's educational video about roundabouts, at http://bit.ly/fhwasafetyvideo.

Road Diet: On an overly wide road that has too many vehicle travel lanes to be safe, lanes can be removed and converted to bike lanes, sidewalks, a buffer between the travel lanes and sidewalks, on-street parking, a landscaped median or some combination thereof. A common road diet transforms a four-lane road without bike lanes into a three-lane road (one travel lane in each direction with a center turn lane or median) with bike lanes and street trees. (See Walkable and Livable Communities Institute, www.walklive.org.)

Above, a mini circle calms neighborhood traffic in the Barker neighborhood, while a modern roundabout handles traffic at 19th.

Safe Routes to School: A national program to improve safety and encourage more children to walk, bike and roll to school. Focuses on improvements through engineering, education, enforcement, encouragement and evaluation. (See National Center for Safe Routes to School, www.saferoutesinfo.org.)

Sharrows: A "shared roadway marking"—usually paint—placed in the center of a travel lane to alert motorists and bicyclists alike to the shared use of the lane. They help position bicyclists away from the opening doors of cars parked on the street, encourage safety when vehicles pass bicyclists and reduce the incidence of wrong-way bicycling.

A sharrow in Seattle, WA.

Sidewalks: All sidewalks, trails, walkways and ramps should be on both sides of streets. Where sidewalk gaps exist or ramps are missing, they should be fixed on a priority basis, working out block-by-block from schools, medical facilities, town centers, main streets and other areas where people should be supported in walking and biking. Sidewalks in people-rich areas should be at least eight feet wide and separated from the curb by a "furniture zone" that can accommodate planter strips, tree wells, hydrants and benches.

Smart Growth: Growing in a way that expands economic opportunity, protects public health and the environment (See U.S. EPA, http://www.epa.gov/smartgrowth/.)

Street Trees: Street trees not only provide shade and a nice environment, but also help protect students walking and bicycling. When placed within four to six feet of the street, trees create a vertical wall that helps lower vehicle speeds and absorb vehicle emissions. They also provide a physical buffer between cars and children. On streets with a narrow space between the sidewalk and curb (also known as the "furniture zone"), trees can be planted in individual tree wells placed between parking stalls, which further reduces travel speeds. Depending on the species, they should be spaced 15 to 25 feet apart.

Traffic Calming: Using traffic engineering and other tools designed to control traffic speeds and encourage driving behavior appropriate to the environment. Examples include street trees, bulb outs, medians, curb extensions, signage, road diets and roundabouts. Traffic calming should encourage mobility for all modes.

Walking Audit: Also called a "walking workshop," this is a review of walking conditions along specified streets conducted with a diverse group of community members. Participants experience firsthand the conditions that either support or create barriers to walking and biking. (See more about walking audits: Walkable and Livable Communities Institute, www.walklive.org.)

Above: Street trees create a buffer between people and cars, and provide shade and beauty. Below: Walking audits, or "walking workshops," give participants an opportunity to see streets through a new lens and observe what works and what doesn't work for active modes of transportation.

Community Goals and Priorities

Community input was collected at three points during the workshop: after the Monday evening presentation and walk audit, during interview-style introductions on Tuesday morning, and after the small-group planning and prioritization activity.

Several key themes emerged:

- Desire to “age in place” in Barker neighborhood
- Desire for a neighborhood gathering place
- Desire for better connections to Burrough’s Creek Trail
- Traffic speeds on Barker and Learnard (primary north-south roads inside neighborhood) are too high
- Long thin medians on Barker Avenue are not working to calm traffic
- Desire from a minority of residents to make Barker and Learnard a one-way couplet, to create more pedestrian space
- Roundabout at Barker and 19th does not slow traffic on 19th (primary east-west road cutting through the neighborhood)
- General absence of sidewalks; specific absence of sidewalks on both sides of 19th
- Concern about future increases in traffic on 19th
- Concern about pedestrian safety on New Hampshire behind Dillon’s grocery store
- Concern for safety of neighborhood children/youth crossing Massachusetts to access elementary and high schools
- Too much/too fast traffic on Massachusetts, and limited crossing locations
- Hazard from bicycles on sidewalks along Massachusetts
- The need for more bus service and better shelters and seats at bus stops

Community members shared their goals and priorities throughout the workshop, including during introductions, walking audits, a bus tour and small-group planning sessions.

Existing Conditions

The Barker neighborhood has many livability and walkability assets

One of the Barker neighborhood's greatest assets is the high degree of engagement of its residents in community issues. The neighborhood association has shown strong leadership and has been successful in advocating for several traffic calming projects over recent years. The Active Living Workshops were well attended and participants generated a lot of positive energy for the next steps.

Just a mile from downtown Lawrence, the neighborhood is in a very desirable location. It is flanked on the western side by Massachusetts St.—which has bus service and wide sidewalks, and connects directly with the downtown business district.

Cut-through traffic has been a problem but traffic calming on several internal streets is helping to channel east-west journeys to 15th and 23rd Streets—the neighborhood's northern and southern boundaries.

A remaining challenge is 19th St., which carries high-speed traffic between Massachusetts St. and eastern Lawrence, and where traffic volumes are expected to increase.

While there is good street connectivity within the neighborhood, 19th St. is the only access from the east, because of limited crossings of Burrough's Creek and former railroad that is now a walking and biking trail. The trail, creek and area of parkland in the north-eastern corner of the neighborhood are additional, but under-utilized assets.

Recent commercial development on Massachusetts has brought a full-service grocery store, hardware store, coffee shop, and bookstore to the edge of the neighborhood, enhancing the ability of residents to access services without a car. In the center of the neighborhood, at 19th and Barker, a former launderette is being converted into a bakery, which has the potential to become a neighborhood gathering place.

Left: Commercial development provides destinations and gathering places. Above: The trail is an important community asset, but seems under-utilized, perhaps due in part to limited connections to it and users being isolated. Below: The Barker neighborhood just feels like a great place.

Neighborhood traffic-calming projects are having mostly positive results

One of the most successful traffic calming installations is the mini-circle close to Babcock Place at the intersection of 17th and New Hampshire. It creates a strong visual barrier and has a degree of deflection that effectively slows traffic on both streets to about 15 mph on entering the mini-circle.

Several speed humps south of the mini-circle on New Hampshire are designed to slow down vehicles leaving the Dillon's grocery store and cutting through the neighborhood (there is no access into the grocery store parking lot from New Hampshire). Additional speed humps on 17th Terrace and 18th St. are popular with residents because they deter cut-through traffic.

However, unsafe vehicle speeds on Barker St. and Learnard St.—the other two north-south streets that run the entire length of the neighborhood—are a problem.

Median islands have been installed in the center of Barker St. at several mid-block locations both north and south of 19th. While these devices are intended to slow vehicles by creating a visual barrier and narrowing the lanes, vehicle speeds still feel too fast for the area; also, several bicyclists expressed concern about merging with traffic to go through the narrowed portion of the lanes while vehicles still are moving so fast. Incidentally, Barker has a sidewalk on one side only.

Learnard St., on the other hand, is a narrow road with a rural character and no sidewalks. There are currently no traffic-calming devices and the street is used as a cut-through by commercial vehicles, creating significant hazards for pedestrians and cyclists. Because of the high cost of widening Learnard or adding sidewalks, a few residents support making it a one-way street with a single travel lane. The sections of Learnard and Barker south of 19th St. have both been evaluated for traffic calming, when funds are available.

Finally, as has been mentioned, 19th St. channels traffic east-west through the heart of the neighborhood. Despite bicycle lanes and a roundabout at the intersection with Barker St., vehicles travel too fast, creating a barrier between the northern and southern portions of the neighborhood.

Even though there are crosswalks at the roundabout, stepping into the crossing feels unsafe due to the high speed of passing vehicles and the reduced likelihood a vehicle will stop—as required by law—the faster it's going.

Traffic volumes on 19th (currently, 6,000 to 8,000 daily vehicle trips including both directions) may be exacerbated as a result of new development in east Lawrence.

Left: A relatively well-designed driveway for Dillon's helps to slow vehicles down and keeps crossing distances short for people walking. Above: The mini circle near Babcock Place functions very well. Below: a pedestrian prepares to cross at the roundabout on 19th and Barker. Bottom: Transit stops need better amenities.

The Burrough's Creek Trail is an under-utilized neighborhood asset

The Burrough's Creek Trail forms the entire eastern boundary of the Barker neighborhood. Occupying a former railroad easement, the walking and biking trail is part of a wide linear park. It runs alongside Burrough's Creek in the north-eastern corner of the neighborhood, where a larger area of park land exists and the City of Lawrence has constructed an attractive pedestrian bridge connecting Maryland St. to the trail and to the neighborhood to the east. South of 19th St., the trail runs behind warehouses and manufacturing buildings and many residents report feeling isolated and unsafe on this section of the trail.

The pedestrian bridge at Maryland St. is the only true neighborhood connection to the trail. There are access points on 15th and 23rd St. (the northern and southern boundaries of the neighborhood) and at 19th St. in the center, but none of these are neighborhood streets. Immediately north of 19th St. is a more recent, higher-density sub-neighborhood of about 40 homes, but—again—there is no trail access.

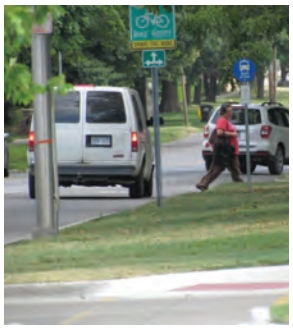
The trail is an important community asset, but seems to be under-utilized, perhaps due in part to limited connections to it and users feeling isolated.

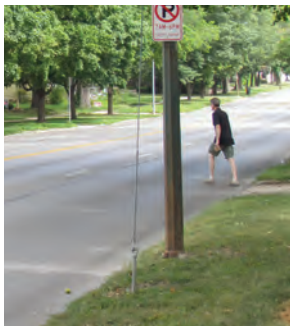
Massachusetts St. serves as a barrier on the western edge of the neighborhood

Massachusetts St. is a four-lane major arterial road that connects State Highway 10 with downtown Lawrence and forms the western edge of the Barker neighborhood.

There are numerous important destinations on both sides of the street, including stores, restaurants, places of employment, schools, and bus stops. However, there are very few safe places for pedestrians to cross and they are spaced widely apart, thereby discouraging residents of the Barker neighborhood on the east side and those living on the west side from walking for utilitarian journeys.

During the walk audit, the pedestrian crossing system at the intersection of 17th St. and Massachusetts was tested and found to be problematic.





First, pedestrians have to request the "walk" light by pressing a button, which in a people-focused area shouldn't be required.

Second, and more concerning, is that the time allotted for people to cross the street isn't adequate.

Unfortunately, permission for pedestrians to cross is often subordinate to making the intersection operate as efficiently as possible for vehicles. Thus, the amount of time afforded for people crossing streets is frequently determined by relative traffic volumes.

East-west traffic on 17th is relatively light, so vehicle-green-light periods are shorter, and therefore "walk" periods for people to cross Massachusetts also are short, even though it is a long way to cross.

At 17th St. and Massachusetts St., left, the pedestrian signal requires manual activation; below left, two pedestrians within minutes of each other choose to cross mid-block instead of at a marked crossing; and below, people aren't given enough time to cross in the crosswalks.

People vote for a good design or a poor one with their feet .... Generally, we don't obey the system when the system is failing us.

- Dan Burden, WALC Institute Co-Founder, addressing pedestrian behavior on streets that don't have frequent crossing locations, adequate crossing signals, or safe vehicle speeds

Conversely, north-south traffic on Massachusetts is relatively heavy, so vehicle-green-light periods are longer, and therefore "walk" periods for pedestrians to cross 17th *should* be long and people should be allowed to cross during the duration of that long period. (This would be different if there was a dedicated left-turn green arrow for north-south traffic, which there is not.) However, when the pedestrian signal is activated and cycles the light to allow people to cross, it stays on "walk" for only a few seconds; it then counts down and returns to the "don't walk" light, even though the vehicle light may still be green for north-south traffic on Massachusetts for additional time.

Even though there is a large university campus less than one mile away, there are no bike lanes on Massachusetts, and thus many cyclists ride on the sidewalks. This creates hazards for pedestrians (especially seniors and those with disabilities) and for the bicyclists themselves when they cross side streets.

Since Massachusetts St. carries just 12,000 to 14,000 trips per day, only one through lane in each direction is needed. Further, the "passing" lane in each direction is often clogged with vehicles waiting for a gap in oncoming traffic so they can turn left into driveways and side streets, increasing the risk of collisions.

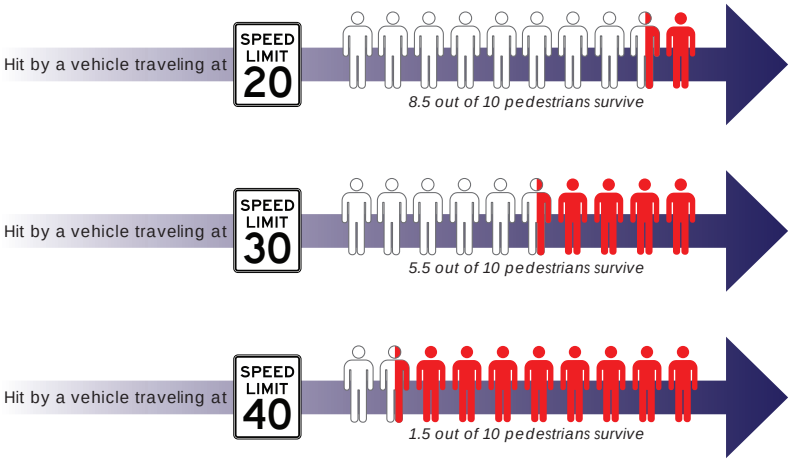
A safer and more efficient design would be to stripe three lanes—one through lane in each direction and a central left-turn storage lane—leaving enough space to include bike lanes. This design is commonly referred to as a "road diet" and the City of Lawrence is currently implementing a conversion like this on 9th St.

Finally, the traffic flows faster and louder on Massachusetts than is appropriate for a street bordering a small-scale retail and residential neighborhood. By replacing traffic signals with modern roundabouts, traffic flow can be improved and collisions reduced, while creating a more pedestrian-friendly ambience.

Top: A bicyclist along Massachusetts St. chooses the sidewalk over the roadway. Right: Its traffic volumes make Massachusetts an ideal candidate for a road diet that would help make the street more supportive of business, people and community.

Vehicle speeds generally feel too fast in the neighborhood

Although the Active Living Workshop doesn't create an opportunity for a comprehensive speed study, multiple walking audits left participants feeling that vehicle speeds are too high in various parts of the Barker neighborhood. Of particular concern are the residential streets of Learnard, shown below, and Barker. Many communities throughout the U.S. are reducing posted speed limits to 20 mph on residential streets and are refocusing efforts on traffic-calming and redesigning streets to achieve safe "target" speeds. The chart below helps illustrate the importance of lower vehicle speeds.



SOURCE: *Killing Speed and Saving Lives,* UK Dept. of Transportation, London, England. See also Limpert, Rudolph. Motor Vehicle Accident Reconstruction and Cause Analysis. Fourth Edition. Charlottesvill, VA. The Michie Company, 1994, p. 663.

Celebrating "the Good"

In and near the Barker neighborhood, there is much to be proud of. In addition to the traffic-calming initiatives, the trail, high levels of civic engagement and other assets described previously in this report, the WALC Institute team also noted the following best practices already in place in the study area.

Indeed, this is just a rock, but it was placed here to solve a critical problem: drivers had been cutting the corner, which damages the curbing and can be dangerous to others, especially people walking and biking. The rock is an inexpensive solution that fits just fine into the context.

Street trees throughout the neighborhood not only improve aesthetics and provide shade during hot months, but they also create a needed buffer between people on the sidewalk and cars passing by. For more about the benefits of street trees, see the fact sheets in the appendix.

Community gardens are an important tool of livability, as they create a community gathering place, can engage people of all ages in an ecologically-friendly practice, provide food, and enhance a neighborhood's sense of community and place.

Recommendations and Next Steps

A project is more likely to succeed if motivated individuals set a course to accomplish their goals immediately. Early successes provide the hand- and toe-holds needed to pull the group from one achievement to the next.

Toward this end, the WALC Institute team has grouped its recommendations for improving walkability in Barker into three categories: short-term goals, many of which could be accomplished in 100 days or less; mid-range projects; and long-term solutions. With the strong showing of residents and community leaders at the Active Living Workshop, the neighborhood should be able to mobilize quickly to implement many of these recommendations.

The 100-Day Challenge for Barker

The 100-Day Challenge sets goals that can be accomplished within 100 days to show a genuine commitment to active living. The following three short-term goals are presented here collectively as the Barker neighborhood's 100-day challenge.

- Review this report with neighborhood leaders and then call a full meeting of the neighborhood association. At this meeting, work to reach consensus on a specific action plan for the first 100 days and the first six months, based on these recommendations but including changes and additions that have strong community support.

- Work with the City to reduce the posted speed limit in the neighborhood to 20 mph. The speed limit in Lawrence is 30 mph unless otherwise posted. This is far too fast for the Barker neighborhood. Although simply posting a lower speed limit does not guarantee all drivers will slow down (enforcement and traffic-calming are also needed), many drivers will obey the new limits and it is important to communicate your neighborhood values to residents and visitors.

- Get onto the Traffic Safety Commission's agenda to discuss a road diet for Massachusetts Street. During the workshop, City traffic engineers mentioned that all traffic projects have to be reviewed by the Traffic Safety Commission, as a first step. Visit http://www.lawrenceks.org/boards/traffic-safety-commission for more information and email traffic@lawrenceks.org to find out when the next meeting will be held and request time on the agenda. Develop a list of priorities to share.

Correct the timing of pedestrian crossing signals at 17th and Massachusetts

Pedestrians walking north or south on the sidewalk on the east side of Massachusetts St. must push a button to request a "Walk" signal to cross 17th St., even when the traffic signal is red for vehicles on 17th St. Additionally, when they are permitted to cross, a countdown timer appears almost immediately and counts down quickly; then, the "Don't Walk" signal reappears, even when the traffic signal for vehicles on 17th St. is timed to remain red for a much longer period of time.

Request that the timing be corrected so that pedestrians have the "Walk" light at all times when the traffic signal is red for vehicles on 17th St., except when there is a dedicated left turn signal for traffic on Massachusetts. This is a small change in the culture of traffic management, which honors pedestrians.

Conduct a study of traffic speeds and volumes on Barker St. and Learnard St.

Barker and Learnard have very different street designs and yet both serve as cut-through streets for north-south traffic avoiding Massachusetts. A speed study would provide information on whether the median islands on Barker are effectively calming traffic or not, and provide baseline data for traffic calming interventions on Learnard. The section of Learnard south of 19th. St. (along with the parallel section of New Hampshire) has been approved for traffic calming (pending funding), so a traffic study may have recently been completed at that location. These measurements could also provide baseline data for testing the effectiveness of reducing the posted speed limit, as recommended earlier.

Launch a citywide campaign to reduce all neighborhood speed limits

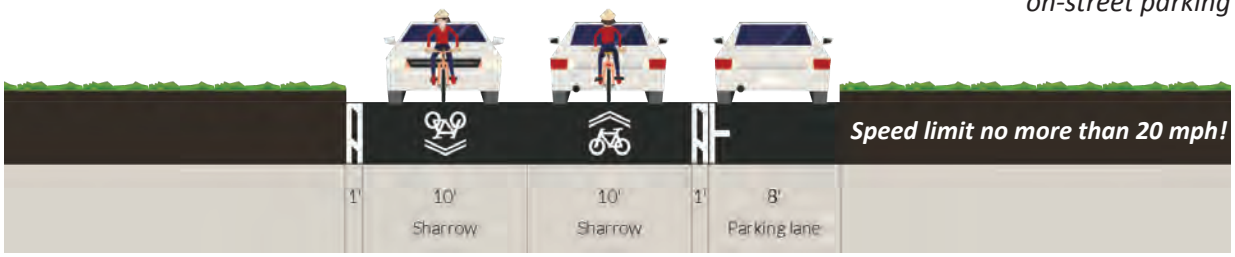
All people should be able to move safely throughout their neighborhood, but that freedom is threatened when vehicles are routinely traveling at 30, 35 or even 40 mph, as too often is the case in 30-mph zones. In many cities, residential speed limits are 25 mph or 20 mph; these areas are more walkable, livable, and safer. Some Lawrence neighborhoods have established lower speed limits. Reach out to them, and others that want to follow the lead, and start a broader movement.

Reduce vehicle speeds on 15th St.

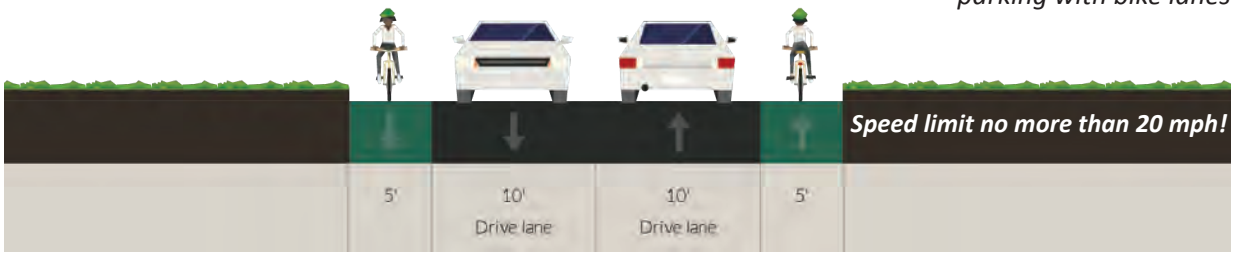
Liberty Memorial Central Middle School, below, is located north of 15th St., which forms the northern boundary of the neighborhood. 15th St. is 30 feet wide, curb-to-curb. Parking is allowed on the south side, but vehicles still tend to move too quickly past the school.

Reduce the posted speed limit from 30 mph to no more than 20 mph in the school area. Additionally, an effective traffic-calming tool in this location would be to apply bold edge stripes, marked 20 feet from each other, essentially allowing 10 feet for each direction of travel. Don't stripe a center line, as leaving it out will help keep vehicle speeds low. Apply "sharrow" markings in both directions of travel so that drivers and bicyclists alike understand the lane is shared. Continue to allow parking on one side of the street. Alternatively, parking could be replaced with bike lanes.

Concept for 15th Street that retains on-street parking



Concept for 15th Street that replaces parking with bike lanes



Bold edge stripes and stencils for sharrows in Fairhope, AL where lanes have been narrowed and the center line removed

Hold a neighborhood visioning event to design a community gathering place

The desire for a community gathering place was raised several times during the workshop. An accessible structure in a pleasant location within the neighborhood, where residents can gather for conversation, companionship, and social activities, is an important component of livability.

Several possible locations were mentioned: a two-acre piece of property on 15th St. that's currently for sale, the existing park south and east of Delaware and Maryland where the City has built a pedestrian bridge, or the new bakery at the center of the neighborhood; there also are a few undeveloped "floodway lots" where Burrough's Creek flows through. Any one of these sites could serve very well as a neighborhood gathering place.

The community can start the process with a facilitated visioning activity to develop a consensus around the form and function of the gathering place, and then select the best location in which to develop it.

Community visioning in Bellingham, WA.

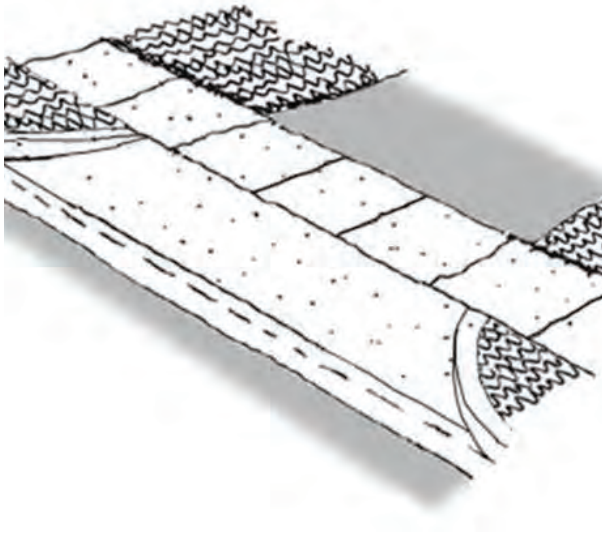
Build high-emphasis crosswalks across driveways, such as at Dillon's grocery store

Dillons is a walkable grocery store. It occupies the entire block between Massachusetts, a major arterial, and New Hampshire, a neighborhood street. There are about 1,000 homes within a half-mile (a ten-minute walk), there is a wide sidewalk in front of the store on Massachusetts and it has a moderately sized parking lot.

Vehicles are allowed to enter the parking lot from New Hampshire, where a narrow gateway ensures slow speeds, but vehicles cannot leave on that side. On the other end, the exits from the parking lot onto Massachusetts are very wide and create a hazard for slow-moving pedestrians on the sidewalk.

The construction of raised and textured/colored crosswalks across the two driveways would emphasize the fact that cars must yield to pedestrians and slow the speed of traffic entering the parking lot.

Below, middle: The Dillon's driveway is narrow, which helps slow cars down and keeps crossing distances short for pedestrians. However, where sidewalks and driveways intersect, the design should favor the pedestrian, such as below.



Best practice: Vancouver, British Columbia

Increase safety and security on the Burrough's Creek Trail

Another frequent comment was that the Burrough's Creek Trail feels unsafe, especially the southern section which runs behind about a half-mile strip of light industrial buildings and warehouses. The feeling of insecurity is caused by an absence of "eyes on the trail" and it can be addressed by cutting back brush that shields the trail, increasing the number of neighborhood access points, and adding amenities that encourage more trail use.

North of 19th St., the trail could be connected to the turnaround at the end of Villo Woods Ct. and, to the south, a link could be constructed across Delaware to Liberty St. New amenities, which (like the trail connections) could be funded through Kansas Department of Transportation's "Transportation Alternatives Program," include benches, maps and way-finding markers, public art, and a pavilion, that might serve as the neighborhood's gathering place.

Existing conditions

One example of a higher-emphasis crosswalk marking; West Palm Beach, FL

On 19th Street, calm traffic more effectively

Barker residents describe 19th St., which runs through the neighborhood in an east-west direction, as a barrier to pedestrians. The street is not unduly wide and includes striped bicycle lanes and a roundabout at the intersection with Barker St. However, traffic hardly slows as it passes through the neighborhood unless there happens to be a vehicle in the roundabout. Drivers tend to flow through the roundabout at speeds that seem unsafe for pedestrians; observing the roundabout for a few minutes revealed that drivers fail to yield to pedestrians, likely because the vehicle speed is relatively high. The roundabout could be altered to increase the "angle of deflection," or amount a vehicle must turn to navigate the circle, which helps slow cars down. Also, install higher-visibility crosswalks. Another effective innovation on 19th would be to remove the center line except for the approach to intersections and make the bike lane stripes bolder, so drivers stay away from the bike lanes but have a little uncertainty about the boundary between their lane and that of the oncoming traffic. This uncertainty helps to lower vehicle speeds.

Implement a "road diet" on Massachusetts

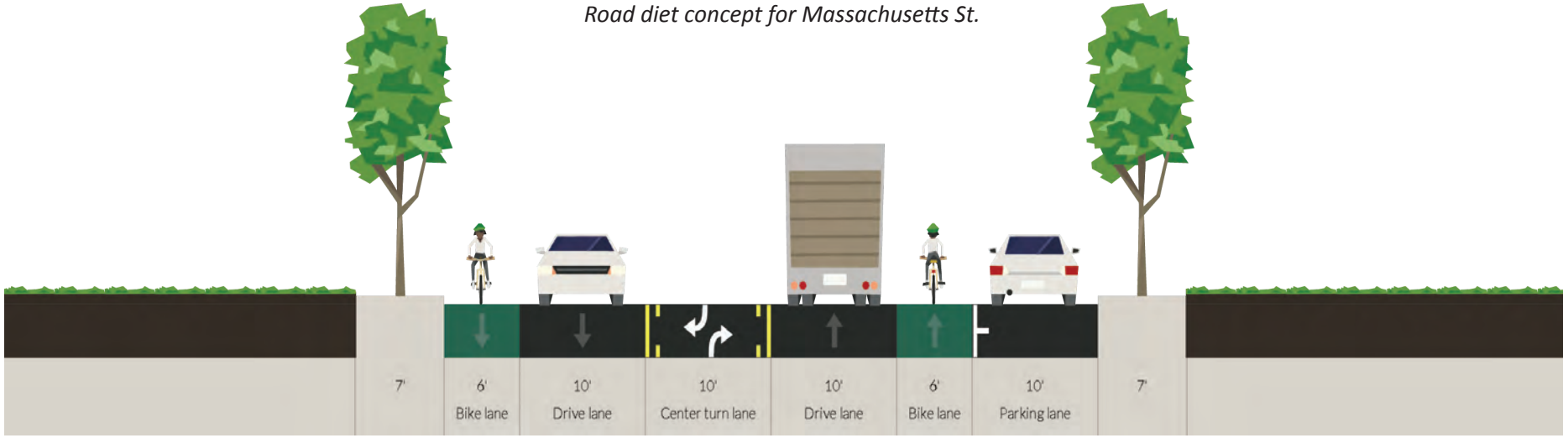
A single traffic lane can carry 18,000 vehicles per day. Massachusetts St., which has two lanes in each direction, carries 6,000 to 7,000 vehicle trips per day. Clearly, there is excess road capacity. Just as importantly, Massachusetts is a key street connecting people to places. With calmer traffic, lower noise levels, better accommodattions for bicyclists and a safer pedestrian realm, Massachusetts can become an even more important—and higher-quality— destination in Lawrence.

Massachusetts should be converted to a three-lane arterial with bike lanes at least from 15th to 23rd St., which is the extent of the Barker neighborhood, but possibly a lot further in both directions.

By putting Massachusetts on this "road diet," the 52 feet of roadway width could be reallocated to provide a 10-foot center turn lane, two 10-foot vehicle lanes (one in each direction) and two six-foot bike lanes, leaving 10 feet for parking on one side of the street.

Road diets bring numerous benefits; see the fact sheets in the appendix for more details.

Road diet concept for Massachusetts St.



Convert the intersection of 19th and Massachusetts to a roundabout

Like the "road diet," the conversion of a four-way signalized intersection to a modern roundabout generall improves traffic flow, reduces crashes, costs less to operate, increases walkability and livability, and stimulates economic activity.

The intersection of 19th and Massachusetts is an ideal location for a roundabout with well-marked pedestrian crossings. The crossings should be set back one car length from the entry point to the roundabout and include crossing islands.

See the fact sheets in the appendix for more information about modern roundabouts.

Appendix:
Active Living Toolbox

Active Living Toolbox

Engage Residents in Finding Solutions
Take Them to the Streets
Visioning Versus Hearings and Process
Set Ground Rules for Facilitators
Do More than Translate
Learn from Elders and Children
Work Effectively with Others
Share Successes
Plan for Pedestrians
Bicycle/Pedestrian Funding Opportunities
Funding Sources and Potential Partners Checklist

Livability Fact Sheets by AARP and WALC Institute

Engage Residents in Finding Solutions

Effective community engagement is critical when developing policies and projects that impact a community's built form. Regardless of setting – whether urban, rural, large city or small town – the benefits of effective community engagement in projects affecting the built environment are numerous. Effective community engagement improves the success rates of policies and projects affecting the built environment. This is in large part because community engagement helps the agencies and organizations that are leading a project understand and respond to the local conditions that will influence the project's development. For example, agencies that create true community engagement are more successful at adapting to socioeconomic changes that may influence the effort than those that do not conduct effective outreach. Additionally, when people affected by the project are involved from the beginning of the development process, it reduces the likelihood of unexpected or significant opposition when it comes time to implement the project. Community members also have unique knowledge of local contexts - including political, cultural and geographic settings. By interacting with the public and gaining important local insight, project leaders can shape and direct the project in keeping with the community vision and needs.

Effective community engagement is critical when developing policies and projects that impact a community's built form.

A conventional model of "public involvement" has been built around complying with legal requirements for issuing public notices about projects and related events, holding public hearings to solicit feedback and incorporating feedback into draft recommendations. The community has been invited in when project leaders have decided input is needed - or when it is mandated by law - and the public hearings, advisory councils, and public comment sessions have formalized the effort. At many public meetings or events, the meeting structure communicates to people that they are to listen and not converse. This model fails to truly engage the public. To engage communities, leaders must move from the conventional model to one that focuses on outreach, capacity-building, inclusiveness and collaboration.

A successful public process starts with developing a community outreach plan that describes the desired outcomes of the project and details the public process, including who the stakeholders and audiences are, how they should be reached, messages, the tools that will be most effective, and how the success of the effort will be measured. Additionally, efforts should be made to conduct workshops, events or meetings in places that are comfortable and familiar to the audiences, and to use language that is clear. Each communication or event should contribute to the public's understanding of the project and its purpose.

Specific outreach tools may include educational workshops, media outreach, paid advertising, surveys, print materials such as flyers and brochures, public service announcements, educational videos, slide presentations, charrettes, newsletters, websites and online communications, direct mail, letters to the editor or guest commentaries, councils, partnerships, coffeehouse chats, meetings, interviews, demonstrations, bulletin boards and more. The main point is that each of these elements has been identified and tied to other initiatives with outcomes

and measures of success so that a quality control and effectiveness feedback loop is in place.

The goal is to engage the community. If the community is not engaged, initially, leaders must take responsibility for developing effective and successful outreach programs that achieves this identified goal. A civic engagement plan allows creators to look at localized efforts to build capacity within the community.

Build Cultural Competence

Ensuring that programs and messages are designed to be relevant, appropriate and effective in different cultures and different languages is important to any successful community outreach. In fact, cultural competence has emerged as a key strategy to improving health and the quality of health care and social services for everyone in the U.S. regardless of race, ethnicity, cultural background or language proficiency. Translating important messages requires strong cultural knowledge, because a word for word translation will not be effective. Reaching people of all backgrounds often requires more than simply translating messages.

To increase their effectiveness, many organizations working with multi-cultural populations are developing "health promoters" programs that recruit people who live in and work in a community to be community educators and liaisons between the program and the community. An example is the DeSoto County, Florida program Promotores/as de Salud that serves Hispanic farm workers. Other communities are working to culturally adapt messages. For example, in California's San Joaquin Valley, campaigns to encourage people to reduce their contribution to summertime smog were developed for English-speaking and Spanish-speaking markets. The campaigns were culturally adapted to focus on types of behavior changes that would be relevant and appropriate in the cultural context of the different audiences. Adaptation of this type requires strong knowledge of the culture and language of the target audience.

Broaden the List of Stakeholders

To build effective community engagement, project leaders should broaden the list of stakeholders and partners whose involvement is sought. Stakeholders and partners commonly include city and county staff, advocacy groups, residents, business operators, property owners, elected officials, community leaders, neighborhood safety groups, school representatives, health agencies, "main street" or downtown groups, charitable non-profit organizations and regional employers. To be more effective, project leaders also should seek the early involvement of churches, news outlets, potential opposition groups and children. Now, more than ever, we identify community outside of geographical areas.

Churches - Across the country, churches build and sustain more social capital than any other type of institution. Thus, project leaders should seek innovative ways to work with church leaders to engage their membership in public projects.

Media - Conventional community outreach plans have treated the media as a means of simply disseminating information. A more effective approach is to engage members of traditional news outlets (newspaper, television and radio) and nontraditional outlets, or "new" media

Health promoters are local liaisons recruited to bridge the gap between the community and active living program.

(online news services, bloggers), as stakeholders and seek their involvement early in the process. Just as project leaders should build capacity amongst residents and within the community, so too should they seek to build capacity with journalists and news outlets.

Opposition Groups **-** Special efforts should be made to reach out to people and organizations that may be expected to oppose the project. It is important to build their trust and involvement. Try to identify and address their concerns both as part of the public process.

Children & Elders **-** Children and elders have much to offer in planning and design processes, yet they remain mostly untapped throughout community transformation processes. A child's imagination is a powerful tool; an elders knowledge inspiring. Together, they often create solutions and engage others in a way that can change the whole tenor of the events.

Start with a Base of Shared Values and Build Understanding

The conventional model for public involvement in projects that affect the built environment often engages the public too late in the process, and in a manner that pits interests against each other. For example, holding a public hearing on a proposed project sets up stakeholders to take a position either for or against the project, without any discussion about community values and whether the project supports those values. A better model is to start the public process with educational workshops or visioning sessions that build a base of shared values. In some communities, a vision plan already exists and in those cases, the vision plan should help guide the project development. In other communities, a simple visioning exercise during a public workshop can go a long way toward helping stakeholders see that they generally want the same things for their community.

Approach Engagement as a Two-Way Conversation

Effective public engagement involves much more than telling people about a project. Rather, it actually facilitates a dialogue that leads to reciprocal learning, collaboration and – ideally – consensus. By engaging in reciprocal learning through the public process, project leaders will gain insight and perspective that can help them ensure the project is tailored to meet the community's needs. Community members also will learn from each other.

Support a Coalition of Community Associations and Resident Activists

A coalition of community-based groups, such as the Community Associations and Main Street members, should organize a steering committee to represent the values and goals of the neighborhood, evaluate the recommendations of this report, prioritize efforts, and pursue funding for implementation. One of the working group's first tasks could be to reach out to faith-based groups, schools, residents and organizations to build capacity within the community. Because community is defined less by geographical boundaries and more by our habits and routines, this working group may need to reach outside of the annexed area, to organizations and groups that residents belong to, in order to meet neighbors. The Neighborhood Revitalization Group could look to the Port of Bellingham project and the success of its working group as a model: http://www.portofbellingham.com/index.aspx?NID=344.

Children and residents care about the built environment and the experiences it allows. Broadening the list of stakeholders ensures better representation.

Take Them to the Streets

Be done with boring public-involvement meetings

When invited to participate in public processes, many people envision dreary meetings in stuffy settings where government employees give presentations on a subject, a project or a goal, and participants are then asked to take turns sharing their feedback.

Who can blame people for not showing up, if they didn't already have a strong interest in the topic? The conventional format for public-involvement processes sometimes is the only option, but in most cases it doesn't build community interest. In fact, it can be downright boring and it fails to capitalize on opportunities to build social capital through the process or engage people in reciprocal learning. Even workshop formats that aim to be more educational can fall short in efforts to build a shared understanding of the issues being addressed or to make participants feel truly engaged in the process.

One approach being used by more and more communities throughout the country is to conduct active, or experiential, workshops that get participants out into the community to explore firsthand what shortcomings exist, and how to improve upon those conditions.

Active workshops include educational presentations, but focus on active learning and firsthand experience. They don't have to be long events – a successful one can be as short as three hours, if planned well.

One of the greatest benefits of an effective active workshop is that it also helps build social capital in the community. When people are taken outside of the classroom or presentation structure and are put in the actual context—such as for a walk along a street to evaluate the built environment—where they can converse freely and naturally with others, many shared interests and connections emerge.

This can foster partnerships that cross any existing real or perceived boundaries, such as differences in generation, culture, socioeconomic status or geography. An especially effective active workshop may even dedicate time toward the beginning of the event to help participants get to know each other through ice-breaking exercises that ideally will lead to long-lasting relationships.

Planning and conducting successful active living workshops require attention to several details that often aren't considered for conventional workshops:

Engage Key Partners Early: Identify community-based organizations, government agencies, healthcare providers, employers, school boards, the media and other organizations whose members or stakeholders may have an interest in the topic. To address active living, engage transportation, planning, emergency services and public works entities. To address healthy

Above: During a walkability audit in Gulf Shores, AL, participants describe their observations about the built environment. Below, in Helena, MT, participants learn firsthand the speeds at which cars travel through neighborhoods.

eating, engage public health and nutrition entities, as well as growers, grocers and restaurant operators. Engage the key partners very early in the planning process, and then enlist their help to conduct outreach and to issue invitations.

Choose the Right Audit Site: Work with the key partners to identify an audit site that captures the essence of changes needed throughout the community or that will have the greatest impact or potential to produce model projects that can serve as catalysts for other projects.

Draw a Strong and Diverse Mix of Participants: Engage the key partners to identify critical participants, such as community leaders with authority to enact the changes sought. Invite representatives from homeowners' associations and neighborhood groups, local elected officials, business groups such as the Chamber of Commmerce, students, residents and retailers. Ensure that the participants represent diverse interests and backgrounds, and be especially attentive to engaging people who might be opposed to the type of effort being addressed. It is important to get them to the table, build their trust and seek their involvement.

Consider Comfort and Abilities: Give careful consideration to participants' comfort and abilities. Everyone who wishes to take part in the full workshop should be able to do so, and any special needs should be accommodated. If the workshop is held during hot or cold months, conduct the outdoor portions at comfortable times of day.

Encourage Relationship-Building Next Steps: An effective active workshop will motivate and inspire those who take part, and many will be eager to contribute their energies toward enacting change. They will need to draw upon each other's strengths, stay in contact, offer each other support, and share information to undertake the important work to be done. Encourage them throughout the workshop to network with each other and exchange contact information. If possible, form a "working group" and decide upon a meeting date before the workshop ends; invite people to opt in.

Talking through concerns and engaging students in the planning processes builds understanding

Dan Burden, executive director of the WALC Institute, says anyone doubting the power of an active workshop should consider this story:

"We once were doing a walking audit on Main Street and 7th Street in Grand Junction when I said to the group, 'Until you have someone buy and replace that old gas station on that corner, this corridor will never fully come alive.' A member of our group left us at that point. He crossed the street, made an offer to the owner, and bought the gas station on the spot. Today, it is a mixed-use building, and it has brought life and vibrancy to the entire corridor."

This not only reinforces the importance of having the right people involved in active workshops, but also illustrates the power of the effort.

Visioning Versus Hearings and Process

The old way of business gives way to new approaches

In the world of real estate development, the cliché is that nobody shows up at a public hearing to comment on a project unless it's in their backyard and they hate it.

But all too often, the real-life scenario is that people who get up to speak against a development never heard about it until a neighbor noted the announcement of a public hearing in the newspaper. By then, everyone in the neighborhood is complaining that they weren't consulted about this proposal to put a strip shopping center on land once eyed for a community center.

It's the way a lot of development gets proposed and approved. There are regulations in the building and zoning codes and a review process that the developer has to navigate. Then there's a public hearing where elected officials ask questions and residents get a chance to comment. Once the developer clears those hurdles, the deal is often done.

But the old way of doing business is starting to change, and it's giving way to new approaches to public engagement that are as varied as the communities and local governments involved.

Residents Really Want to Be Heard

Increasingly, local officials are engaging residents in visioning and brainstorming sessions when they have an area of open land or a high-profile redevelopment site that they know is a target for developers.

It's not enough to give people their three minutes to speak at a public hearing, where a little red light goes on when their time is up. There's no give and take in that. It's just a formality.

Most people want to hear about development plans as they're evolving. They want to have a conversation about them; an exchange of ideas about the pros and cons.

Even if their ideas aren't ultimately adopted, it's important that they get the chance to share them fully. And there are many workshop and meeting formats to accomplish that goal. A good starting point is a community visioning session, which might best be likened to a brainstorming session.

Say, for instance, there's an old boarded-up mill on a ten-acre site in the heart of an inner-ring suburb. Area residents and business owners are invited to a three-hour meeting in which they're encouraged to break up into small groups to talk about what would work well there. As they throw out ideas for how the property might be used, a facilitator sketches them. After a couple of hours, each of the groups gets up to present their respective vision for the

Increasingly, local officials are engaging residents in visioning and brainstorming sessions. Above, a community values exercise in Bellingham, WA. Below, envisioning potential design solutions in Sacramento, CA.

property, recommending what should be built there and what the area should look and feel like.

Such sessions provide an ideal format for neighbors to advocate for pedestrian-friendly design and good transit connections.

Local governments sometimes go even further with major planning exercises designed to create a blueprint for development over a large area.

In these cases, the right approach might be a more intensive, multi-day charrette where professional planners facilitate discussion among developers, community members, business leaders, environmentalists and other stakeholders.

They hear from housing experts and economic development professionals about the market for various land uses, and from retailers who know what kinds of retail and restaurants would work in a given location.

There are architects on hand to sketch what's discussed and planners to draft policy language, with both getting real-time feedback from participants.

In the end, a charrette aims to yield an actual plan for the study area that is viable and well vetted. One that participants understand at a level of depth and detail that they would never know with any development proposal that's finalized by a development group working solely with local government planners. They understand all of its individual features and the rationale behind them.

In a design charrette, the community voices their desires and concerns while graphic artists sketch out renderings for feedback and vetting.

Set Ground Rules for Facilitators

Set ground rules to improve productivity and success

A safe, friendly meeting environment can help leaders achieve the planned meeting goals and objectives. Establishing ground rules that respect individual rights and responsibilities builds trust among participants and can lead to a successful meeting experience. It is frustrating and unproductive to participants and facilitator alike when opinions are not respected, persons are criticized, and many views are not expressed. Other terms that may be used interchangeably with ground rules include guidelines, group agreements, covenants or norms. In this publication the term ground rules applies to a set of rules that are usually developed at a first meeting and used by the facilitator to manage individual and group interaction.

Here are ground rules for leading a meeting addressing controversial issues.

For Group Members:

- One person speaks at a time when the group is in full session and not at breakout tables.
- All will share ideas in order.
- Questions may be asked to clarify ideas.
- No one may criticize another.
- Ideas may be reviewed to look for themes.
- Feelings may be expressed. They are not to be ignored or denied.
- Discussions are about positions, not personalities.

For the Facilitator:

- Make sure participants are physically comfortable.
- Share the covenants with participants at the outset of the meeting. Repeat the covenants and convey that by being part of the meeting, everyone is agreeing to the covenants.
- Communicate with everyone at his/her level.
- Act as the neutral person. Refrain from giving a personal opinion.
- Maintain a positive group atmosphere.
- Allow thinking time.
- Avoid: lengthy comments, giving verbal rewards for good answers, asking loaded questions or conveying a "know-it-all" tone.

The following guidance is provided by the University of Minnesota Extension's publication, Facilitation Resources - Volume 4. *The full publication is available at* http://bit.ly/wWsRUJ.

Facilitators need to ensure everyone agrees to the covenants at the outset of the process, and that all voices are heard.

Do More than Translate

Build cultural competence by adapting, not translating

Ensuring that programs and messages are relevant, appropriate and effective in different cultures is important to any effort to conduct successful community outreach. But reaching people of all backgrounds requires more than simply translating messages.

Especially in rural communities, messages perceived to have been created by "outsiders" can actually do more harm than good by creating discomfort or mistrust. To increase their effectiveness, many organizations working with multi-cultural populations or in rural communities are developing programs to culturally adapt campaigns and messages.

For example, in California's San Joaquin Valley, the Air Pollution Control District's summertime smog-reduction campaigns encouraged people to change their behavior to be more air-friendly. The campaigns targeted multiple audiences from different cultural backgrounds, with the English-language campaign focusing on carpooling to reduce pollution. The strong cultural knowledge of staff and outside professionals helped project leaders understand that the Spanish-speaking target audience already carpooled as a standard practice. Thus, the Spanish-language campaign was adapted to focus on messages that were more meaningful to the audience: to drive less and keep the car tuned up.

Getting it Right

When culturally adapting messages, consider the following:

Language Doesn't Equal Culture: Although a shared language is important to culture, people who speak the same language often are from different cultures. Be sensitive to the differences and develop appropriate messages.

Start with Strong Cultural Knowledge: Tap the knowledge of colleagues, in-house staff or consultants who live, work or grew up in the culture.

Get Feedback: Work directly with members of the audience to determine appropriate approaches. Use focus groups to screen messages before they are distributed.

The San Joaquin Valley [Calif.] Air Pollution Control District culturally adapted its summertime smog-prevention campaign to focus on the types of behavior changes that would be relevant to different cultures. The English campaign focused on carpooling, whereas the Spanish campaign focused on driving less and keeping the car tuned up. (Images: San Joaquin Valley Air Pollution Control District.)

Learn from Elders and Children

Abilities are valuable, but often overlooked

Design "charrettes" are indispensable tools for hammering out solutions to complex community design issues. Through a mix of public workshops, open houses and creative, intense design sessions, charrettes create a collaborative planning process that harnesses the talents and perspectives of residents, town planners, community leaders and public health officials alike.

In fact, getting all of the right people together for a design charrette is key to ensuring that the outcome reflects the values and goals of the community. People from all sectors of society with diverse backgrounds are needed at a charrette, including local government officials, planners and designers, landscape architects, transportation engineers, nonprofit managers and public health officials.

But even with engaged and motivated participants from all relevant backgrounds, the charrette still may be missing two very important groups that can provide valuable insight about how to design a community to be healthier and happier: elders and children. Children have much to offer in the community planning and design process, yet they remain mostly untapped throughout community transformation processes.

A child's imagination is a powerful tool; they can dream up the perfect community in which to live, play and go to school. Beyond the power of their imaginations, they also can bring very practical solutions to the table. For example, children often are aware of shortcuts to the places they go that could be formalized into trails and added to the community's pedestrian network. Elder-child charrettes also help publicize the public process being undertaken and build social capital by bringing generations together. They foster collaboration among school representatives, local government staff and parents.

And involving elders and children in public processes can change the whole tenor of the events. Children very often speak readily about important values. Their honesty helps raise the discussion to the level of values and guiding principles. Elders bring a lifetime of observations and community history to share.

Simply asking a child the question, "What would you like to see on your walk to school and back?" can provide meaningful insight into the community that could be. The answers will capture community values, important street and sidewalk connections, playful aesthetics and other place-making elements that might be overlooked. This, combined with an elders perspective can yield surprising and beautiful results. The boundless imagination and colorful creativity of children combined with sage wisdom clarifies values quickly.

Above: Children often speak readily about important values - such as providing equipment that allows all children of all abilities the opportunity to swing.

Below: A children's charrette in Glenwood, CA.

Planning a child-elder design charrette requires attention to several details that a standard charrette doesn't require. Don't let these details be a deterrent, though; the benefits far outweigh the added responsibilities.

Keep it Fun. The chief objective is to keep a charrette fun and engaging. Work with schools, parks and recreation departments, and parent/teacher associations to identify the best venue for engaging children and to conduct the needed outreach to ensure that children attend.

Make it Age Appropriate. Children of all ages can be tapped for their talent. For younger children, from kindergarten to 3rd grade, a successful charrette may only include a short walking audit, allowing them to point out things they like and don't like along the way, and then returning to the workshop setting and drawing pictures that reflect their findings. They also can develop short skits or performances that describe the shortcomings they find in their existing environment and in the community they desire. The entire event might be only 30 to 45 minutes long. Students in the 4th grade and higher are better able to draw, photograph, interpret and explain their concerns. They can even use photography to create "photo voice" or poster presentations. Young teens can plot using trace paper and aerial maps. They often know what is missing from their neighborhoods, or where unleashed dogs, broken sidewalks and generally unsafe areas can be found.

Incorporate it Into the Larger Effort. Find ways to incorporate child-elder work into the larger charrette or community effort. If the primary children's charrette takes place at school, make advance arrangements with teachers or parents to have the children present their designs or posters during the community charrette. Present their findings first, as this often warms up the audience and allows them to see how quickly and easily children "cut to the chase," identifying what works and does not work. Also, consider whether it is appropriate and desirable to invite representatives of the news media to cover the children's charrette. If so, work very closely with the school or parents to ensure appropriate permissions are obtained and privacy is respected.

Above, children vote during a charrette in Sacramento, CA. Below, an "inter-generational" walking audit in Morrow, GA.

Work Effectively with Others

Dealing with challenges

We work best with others when we feel as if we belong and that our contributions are valuable. Disruptive behaviors fall into two main categories: progress-blocking and group-thwarting. Progress-blocking actions interrupt processes and discourage next steps. Group-thwarting actions undermine the confidence and ability of the group to act cohesively. Successful groups watch for indicators of disruptive behaviors.

While the motives for disruptive behaviors are complex, unclear objectives are the biggest barrier to effective team performance. If disruptive behaviors are interrupting progress or undermining the confidence of the group, it is time to discuss this as a group. All discussions and deeds should be examined for how they lead to the group's stated goals. When a disagreeable comment is made, the group should ask, "What is the desired outcome of that statement?" or "How does this conversation lead us to our goal?"

Staff and residents are partners in community building

Behaviors that Block Progress

- Confrontational instead of cooperative approaches
- Attacking a person rather than a problem
- Engaging in gossip, clique-forming or other power-seeking activities
- Excessive talking, loud voices or otherwise dominating a conversation
- Speeches rather than discussions
- Allowing ultimatums to be made
- Constantly joking, clowning or making sexually-charged remarks
- Silence or failing to engage others
- Jumping from task to task or set next steps
- Advocating ideas without actions
- Failing to complete assignments on time
- Not communicating successes or failures
- Not tying actions to goals or next steps
- Being unkind, unsupportive or mean-spirited
- Attention- or sympathy-seeking behaviors
- Failure to disclose interests or conflicts
- Dismissive or denial-seeking behaviors
- Arguing
- Presenting only one side of a topic
- Departing from the topic regularly
- Introducing unnecessary, anecdotal or tangential information
- Revisiting tasks that the group agrees are complete
- Showing an inability to transition

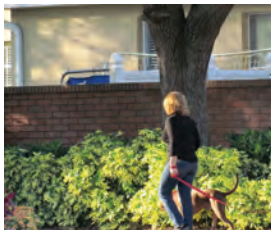
Share Successes

To help effectively convey existing conditions, try "digital storytelling." Create a presentation that uses images, video or graphics to show in a compelling way why changes are needed in a particular area.

Although videos and graphically rich presentations are great tools, they can be difficult for people not trained to do them. A simpler idea is to create a Power Point or other type of user-friendly presentation with digital images you capture yourself. Following are some tips, illustrated with slides from a presentation created by a resident in Winter Garden, FL who wanted to share concerns about nearby roadways with city staff.

- Determine the purpose of the presentation. Is it to show city staff that there is a safety issue? Is it to convince homeowners to support a roadway project? Is it to engage local business as stakeholders? Consider what messages and images will resonate with the intended audience.
- Carry your camera everywhere for a while. You need to get a variety of images and you never know when the perfect picture to document a particular concern will emerge.
- Avoid staging pictures. Be authentic. But by the same token, don't be afraid to use your friends and family in pictures. You spend more time with them than anyone else and so you're likely to be able to get pictures of conditions affecting them. Also, they are your reason for doing this work, so it's appropriate to let that concern for them come through in your presentation. And if it's important to document something but it would be dangerous to do so without staging it, then by all means stage it, but disclose that fact in the presentation.
- Use Google Earth (download it for free) to get an aerial view of the "study area."
- Use PowerPoint or a similar presentation program to put the images in order and put labels on them. Although it's ideal to be able to deliver your presentation in person, expect that it may also be viewed on its own, so it has to be self-explanatory. Consider using free or low-cost online tools such as social media or slide-sharing services to disseminate your presentation to multiple audiences.
- Be transparent and share your agenda. Let people know why you're so interested in the project. Whether for the health and safety of your family, for business or economic reasons or to simply make your community a more enjoyable place, include that in the presentation.
- Build the presentation the way you would tell a story.

Capturing existing conditions through photography helps to explain safety concerns and represent the community.



1. First, tell the story of the community or the neighborhood in the way you understand it. If you're not an engineer or planner, you're not expected to communicate like one. Explain things in a comfortable way.
2. Start by describing the context and explaining what the neighborhood is like, who lives there, and what the various land uses are. This gives the audience a sense of the community character.
3. Explain the problem. You don't need to be an expert in traffic operations to be able to point out that cars are moving too quickly for you to feel comfortable letting your children walk to the playground, or riding your bike to the store.

- Use images that document the things that make you feel unsafe or disconnected. Use statistics as appropriate.

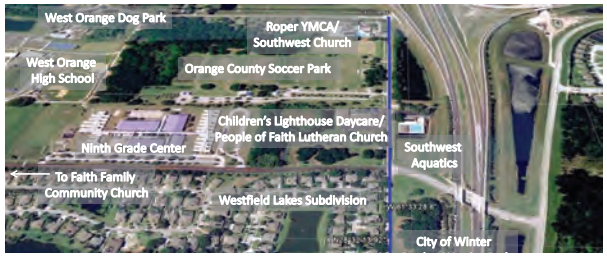
The Problem

Intersection Width and Turning Radii

Use presentation software to put the images in order and apply labels and explanations. Explain the community character and context. Document the problems in your own terms. Use statistics if needed.

The Corridor

Great Land Uses



The Problem

Speed Limit, Speed and Conflicts

Plan for Pedestrians

Walkable communities outperform car-oriented communities economically. Nearly everyone, for at least some portion of every day, is a pedestrian. This is why pedestrian planning matters. Pedestrian master planning establishes the policies, programs, design criteria, and projects that will further enhance pedestrian safety, comfort, and access in a community. Through the pedestrian master planning efforts, a community will have environmentally, economically, and socially sustainable transportation systems.

A pedestrian master plan helps communities to:

- Review existing plans, policies, guidelines and codes to determine whether inherent conflicts exist within these documents that might impact the continuity of pedestrian infrastructure across the cities' borders.
- Build a toolbox and best practices that inform pedestrian planning. Tools can include performance methods and monitoring that functions within the area.
- Propose and refine treatments to ensure the integrity of the pedestrian network and to provide clear messaging to users about pedestrian rights and responsibilities.
- Perform field research to identify conflicts, especially noting conditions such as sidewalk gaps and the distribution of existing pedestrian facilities.
- Analyze needs and demand based on information gathered, allowing a broader understanding of patterns, behaviors and origins and destinations.
- Perform a security analysis because people will not walk if they feel that they must navigate through an area with no activity or "eyes on the street."
- Determine where they need to add shade to streets and sidewalks, because if you want people to walk in all temperatures, it's necessary to provide environments that are comfortable for walking.
- Develop criteria for ranking, prioritizing and implementing projects for maximum impact and to better support current initiatives.
- Develop funding strategies that might reduce the burden of improvements.

Pedestrian Master Planning focuses on pedestrian safety, comfort and access in a community.

Resources

The Pedestrian and Bicycle Information Center (PBIC) is a national clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians (including transit users) and bicyclists. Model pedestrian plans are available at

http://www.walkinginfo.org/develop/sample-plans.cfm.

Bicycle/Pedestrian Funding Opportunities

Project type	NHS	STP	HSIP	SRTS	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Bicycle and pedestrian plan		•				•						•	•			
Bicycle lanes on roadway	•	•	•	•	•	•		•	•	•					•	•
Paved shoulders	•	•	•	•	•	•				•					•	•
Signed bike route	•	•		•	•	•									•	•
Shared use path/trail	•	•		•	•	•	•								•	•
Single track hike/bike trail							•									
Spot improvement program		•	•	•	•	•										
Maps		•		•		•					•					
Bike racks on buses		•			•	•		•	•							
Bicycle parking facilities		•		•	•	•		•	•							•
Trail/highway intersection	•	•	•	•	•	•	•								•	•
Bicycle storage/service center		•		•	•	•		•	•				•	•		
Sidewalks, new or retrofit	•	•	•	•	•	•		•	•	•					•	•
Crosswalks, new or retrofit	•	•	•	•	•	•		•	•						•	•
Signal improvements	•	•	•	•	•	•										
Curb cuts and ramps	•	•	•	•	•	•										
Traffic calming		•	•	•									•			
Coordinator position		•		•		•							•			
Safety/education position		•		•		•					•					
Police patrol		•		•							•					
Helmet promotion		•		•	•						•					
Safety brochure/book		•		•	•	•	•				•					
Training		•		•	•	•	•				•					

Source: http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm#bp4.

**See the key on the following page for funding sources.*

Bicycle/Pedestrian Funding Opportunities Key		
NHS	National Highway System	http://www.fhwa.dot.gov/planning/nhs/
STP	Surface Transportation Program	http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm
HSIP	Highway Safety Improvement Program	http://safety.fhwa.dot.gov/hsip/
SRTS	Safe Routes to School Program	http://safety.fhwa.dot.gov/saferoutes/
TEA	Transportation Enhancement Activities	http://www.fhwa.dot.gov/environment/te/index.htm
CMAQ	Congestion Mitigation/Air Quality Program	http://www.fhwa.dot.gov/environment/air_quality/cmaq/index.cfm
FLH	Federal Lands Highway Program	http://www.flh.fhwa.dot.gov/
BYW	Scenic Byways	http://www.fhwa.dot.gov/hep/byways/index.htm
BRI	Highway Bridge Program	http://www.fhwa.dot.gov/bridge/hbrrp.htm
SCTSP	State and Community Traffic Safety Program	http://safety.fhwa.dot.gov/policy/section402/
PLA	State/Metropolitan Planning Funds	http://www.fta.dot.gov/grants/13093_3563.html
TCSP	Transportation, Community and System Preservation Pilot Program	http://www.fhwa.dot.gov/tcsp/index.html
JOBS	Access to Jobs/Reverse Commute Program	http://fta.dot.gov/grants/13093_3550.html
RTP	Recreational Trails Program	http://www.fhwa.dot.gov/environment/rectrails/index.htm
FTA	Federal Transit Capital, Urban & Rural Funds	http://www.fta.dot.gov/grants_263.html
TE	Transit Enhancements	http://www.fhwa.dot.gov/environment/te/te_provision.htm

Source: http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm#bp4.

Funding Sources and Potential Partners Checklist

Date Contacted	Agency	Website
	Health Department	http://www.apha.org/about/Public+Health+Links/LinksStateandLocalHealthDepartments.htm http://www.naccho.org/toolbox/
	Main Street Program	http://www.preservationnation.org/about-us/partners/
	Chamber of Commerce	http://www.uschamber.com/chambers/directory/default
	Community Foundations	http://www.cof.org/whoweserve/community/resources/index.cfm?navItemNumber=15626#locator
	Local and State Elected Officials	http://www.capwiz.com/apha/dbq/officials/
	Transportation Enhancement Funding by State	http://www.enhancements.org/Links.asp#statedot
	State Bike and Pedestrian Coordinator	http://www.walkinginfo.org/assistance/contacts.cfm
	State Safe Routes to School Coordinator	http://www.saferoutesinfo.org/program-tools/find-state-contacts
	American Public Health Association	http://www.apha.org/advocacy/priorities/issues/transportation
	Federal Highway Administration Bicycle and Pedestrian Program	http://www.fhwa.dot.gov/environment/bikeped/
	Federal Highway Administration State Manual	http://www.fhwa.dot.gov/planning/statewide/manual/manual.pdf
	Department of Housing and Urban Development CDBG	http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs
	Partnership for Sustainable Communities (DOT, HUD, EPA)	http://www.sustainablecommunities.gov/
	Centers for Disease Control and Prevention	http://www.cdc.gov/transportation/docs/FINAL%20CDC%20Transportation%20Recommendations-4-28-2010.pdf
	AARP Livable Communities	http://www.aarp.org/home-garden/livable-communities/
	Active Living By Design	http://www.activelivingbydesign.org/
	Alliance for Biking and Walking Resources	http://www.peoplepoweredmovement.org/site/index.php/members/members3/C258
	America Bikes	http://americabikes.org
	America Walks Resources	http://americawalks.org/resources/links
	Association of Pedestrian and Bicycling Professionals	http://www.apbp.org/
	Complete Streets Coalition	http://completestreets.org
	League of American Bicyclists	http://www.bikeleague.org/
	National Center for Bicycling and Walking	http://www.bikewalk.org/
	Partnership for a Walkable America	http://www.walkableamerica.org/
	Safe Communities	http://safecommunitiesamerica.org/
	Smart Growth America	http://www.smartgrowthamerica.org/about/our-coalition/
	Transportation for America	http://t4america.org

Modern Roundabouts

A LIVABILITY FACT SHEET

Every day in the U.S. more than 20 people are killed at traffic intersections, and many more are seriously injured.[1] Roundabouts — circular intersections that move traffic counterclockwise around a central island — can help reduce these deaths and injuries. Roundabouts are calmer and safer than conventional intersections and have been deemed a "proven safety counter-measure" by the U.S. Department of Transportation.[2]

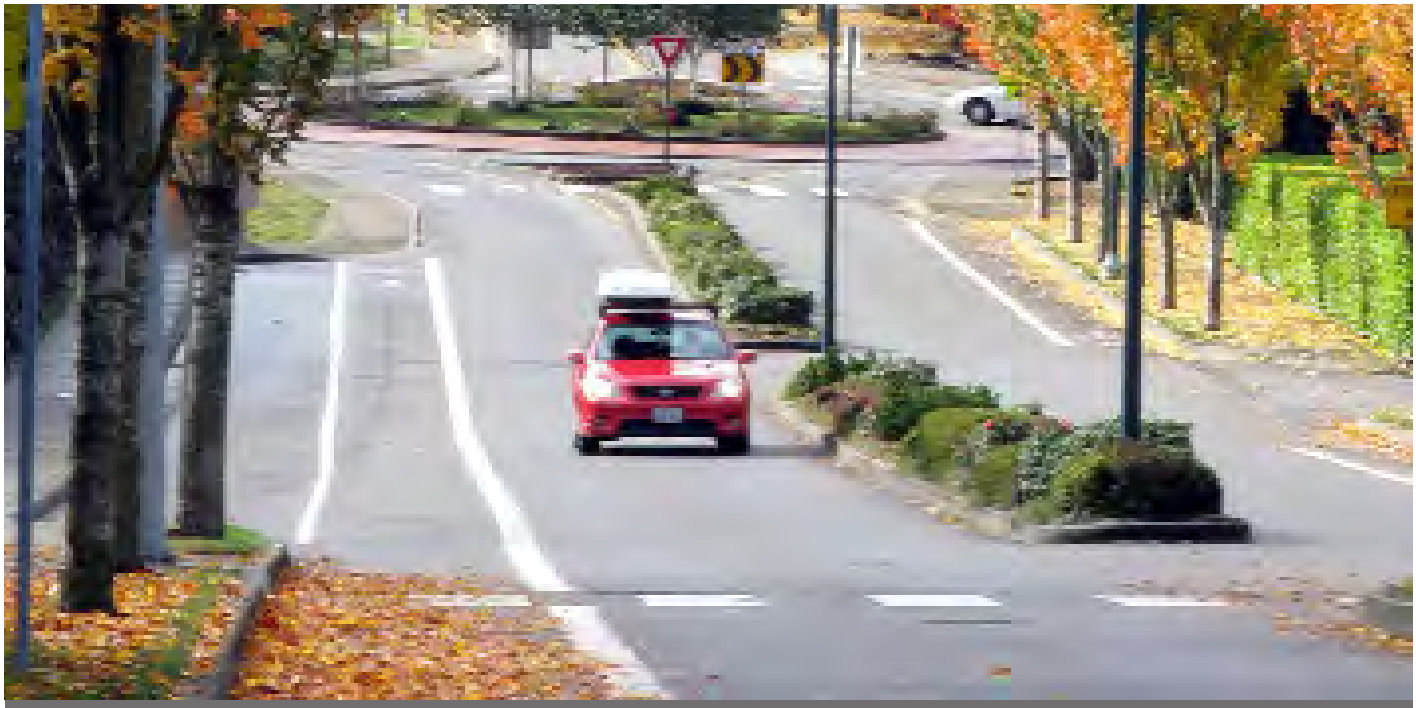
Modern roundabouts — often the size of a baseball field — differ from rotaries or traffic circles, which can be as big as the stadium itself. Roundabouts feature lower, safer vehicle speeds. They can be 80 feet across with single lanes carrying 25,000 vehicles a day or larger at 200 feet, with double lanes and 45,000 vehicles a day.[3]

Personal injuries and fatalities plummet as much as 90 percent in modern roundabouts when compared to conventional intersections.[4] Roundabouts cause drivers to slow down, ideally to less than 20 mph, which reduces the risks to both pedestrians and drivers.

Because roundabouts can handle 30 to 50 percent more traffic than conventional intersections, they reduce travel delays.[4] Since roundabouts can be designed to be aesthetically pleasing, they help create a sense of place.

By January 2014, roundabouts graced over 2,000 intersections in the U.S., with more planned.[5] Given their safety and placemaking benefits, roundabouts should be considered for many more of the three million intersections in the U.S.

1. U.S. Department of Transportation's Federal Highway Administration (FHWA) (n.d.), safety.fhwa.dot.gov. Modern Roundabouts: A Safer Choice. http://safety.fhwa.dot.gov/intersection/roundabouts/fhwasa10023/transcript/audio_no_speaker/
2. U.S. DOT FHWA (n.d.), safety.fhwa.dot.gov. Proven Safety Countermeasures. http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_005.htm
3. U.S. DOT FHWA (n.d.), fhwa.dot.gov. Roundabouts: An Informational Guide. http://www.fhwa.dot.gov/publications/research/safety/00067/000674.pdf
4. U.S. DOT FHWA (n.d.), safety.fhwa.dot.gov. http://www.fhwa.dot.gov/resourcecenter/teams/safety/teamsafe_rndabout.pdf
5. Kittelson & Associates, Inc. (August 2000), roundabout.kittelson.com. Modern Roundabouts. Retrieved Feb. 3, 2014, http://roundabout.kittelson.com/Roundabouts/Search



Vehicle speeds on Grandview Drive in University Place, Wash., were once as high as 50 mph. After the installation of roundabouts, crashes dropped from one every nine months to none in 14 years.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

"Roundabouts require too much land."

Roundabouts can be installed on virtually any size street. They can range from single-lane mini-roundabouts to two lanes or more.[6] A single-lane roundabout can be as narrow as 80 feet in diameter, measuring across the circle from the outside edges of the vehicle lanes. A well-placed roundabout can keep a road from being widened, saving up to 10 million dollars per mile in land and construction costs.[7]

"The public won't embrace roundabouts."

Before several two-lane roundabouts were installed in Bellingham, Wash., only one-third of people surveyed by the Insurance Institute for Highway Safety supported the creation of a roundabout. Once it was built, the numbers reversed, and 70 percent of respondents became supportive.[8] In another study conducted by the Institute, support for six different roundabouts went from a low of 22 percent to a high of 87 percent five years after installation.[9] Building one roundabout in a community is usually all it takes to convince most people of their benefits.

"Roundabouts hurt business."

The lower the speed of traffic through an area, the easier it is to park a car, walk, bicycle and locate and approach a business. Since roundabouts are also quieter than conventional intersections, outdoor seating can be placed nearby. In Golden, Colo., retail sales increased 60 percent after the addition of a string of roundabouts — and that was during the 1989 recession. Sales in Golden outpaced those of all other cities in the state.[10]

"Fire trucks, snowplows buses and semis can't use roundabouts."

A "truck apron" in the center of a roundabout can accommodate emergency vehicles and large trucks, including those with wheel-base lengths of 50 or more feet.

"Roundabouts don't work for pedestrians or bicyclists."

By using space to pause on the "splitter island," pedestrians need to watch only one direction of traffic at a time, which simplifies the task of crossing the street. The low vehicle speeds through a roundabout — which can be as low as 15 mph — also allow more time for drivers and pedestrians to react to one another, which reduces the chance and consequences of error. A bicyclist can be given the option of riding in the lane of slow-moving cars or crossing as a pedestrian.[11]

"Roundabouts aren't good for older adults."

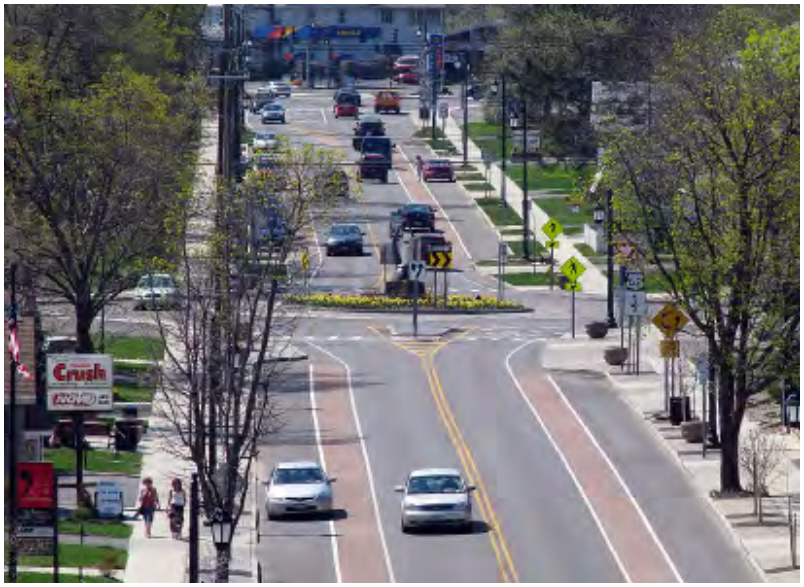
By 2025, about one-quarter of all drivers in America will be over the age of 65. Forty percent of all car crashes that involve drivers over the age of 65 occur at intersections.[12] As we age, we lose our ability as drivers to judge left-turn gaps.[13] Roundabouts don't require those decisions, and they eliminate head-on and right-angle crashes. When collisions do occur, they are at lower speeds and less harmful.

"Pedestrians with limited vision can't cross roundabouts."

A known issue with roundabouts and other street crossings — such as mid-block crossings and right-turn slip lanes — is that it's difficult for pedestrians with limited vision to determine when traffic has stopped and it's safe to cross. Solutions are being sought to address this problem.[14, 15]

6. U.S. DOT FHWA (February 2010). Technical Summary: Mini Roundabouts. http://safety.fhwa.dot.gov/intersection/roundabouts/fhwasa10007/fhwasa10007.pdf
7. American Road and Transportation Builders Association (n.d.), ARTBA.org: electronic references. http://www.artba.org/faqs/#20
8. Insurance Institute for Highway Safety (February 2013). Public Opinion, Traffic Performance, the Environment, and Safety after the Construction of Double-Lane Roundabouts. Retrieved Feb. 3, 2014, http://www.iihs.org/frontend/iihs/documents/masterfiledocs.ashx?id=2033
9. Transportation Research Record: Journal of the Transportation Research Board (2007). Long-Term Trends in Public Opinion Following Construction of Roundabouts. http://trb.metapress.com/content/1162251045856345/?genre=article&id=doi%3a10.3141%2f2019-26
10. City of Golden and LSC Transportation Consultants, Inc. (April 2006). Development Opportunities: Golden, Colorado Case Study. http://lscdenver.com/Papers/Minnesota%20Revised%202006.pdf
11. National Cooperative Highway Research, Transportation Research Board, National Academies of Science. Roundabouts in the United States, Program Report 572. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_572.pdf
12. U.S. FHWA. (n.d.) Modern Roundabouts: A Safer Choice. http://safety.fhwa.dot.gov/intersection/roundabouts/fhwasa10023/transcript/audio_no_speaker/
13. Owsley, C. (2004). Driver Capabilities in Transportation in an Aging Society: A Decade of Experience. Technical Papers and Reports from a Conference: Bethesda, MD.; Nov. 7-9, 1999. Washington, D.C.: Transportation Research Board
14. Pedestrian Access to Roundabouts: Assessment of Motorists' Yielding to Visually Impaired Pedestrians and Potential Treatments to Improve Access, FHWA. http://www.fhwa.dot.gov/publications/research/safety/pedbike/05080/

HOW TO GET IT RIGHT



In Hamburg, N.Y., a series of roundabouts on Route 62 helps calm traffic and create a sense of place.

This approach to a roundabout in San Diego, Calif., reduces the distance people must cross.

The success of any tool lies in getting it right, and this is especially true of modern roundabouts. Try the following:

■ Adopt a roundabout-first policy

Whenever a project includes reconstructing or constructing an intersection, analyze the feasibility of using a roundabout instead. This approach is recommended by the U.S. Department of Transportation's Federal Highway Administration and backed by the Insurance Institute for Highway Safety.[16]

■ Embrace a public process and build support

Since roundabouts can be a new idea, elected leaders and agency staff may need to seek public support first, to inspire approval and navigate implementation. For example, community advocates can print this fact sheet, talk to neighbors, build community support and then meet with decision makers, news outlets, experts and others to discuss the benefits of roundabouts. Agency staff can engage the public in a meaningful process, hosting interactive design workshops to build public acceptance and understanding.

■ Design for speeds lower than 20 mph

Fast-moving vehicles kill people and divide places. A pedestrian hit by a vehicle at 20 mph has a 90 percent chance of survival while the odds of surviving a 40 mph impact are only 10 percent.[17] Good roundabout design ensures that drivers slow down to 15 or 20 mph. This protects pedestrians, reduces pollution and noise and creates a more pleasant neighborhood.

■ Keep dimensions tight

To keep traffic calm and therefore safe for all roadway users, roundabouts should feature context-appropriate design elements that reduce speed. Examples include tight entry and exit turn radii, landscaping, narrow entry and circulatory lanes, a truck apron for large vehicles and splitter lanes to help pedestrians cross two or more traffic lanes.

■ Make it beautiful

An aesthetically pleasing roundabout can create a sense of place, frame a neighborhood, establish an entry point into a business district and serve as a canvas for public art or a garden.

15. Skene, M., Jacobson, M., Havercroft, D., Boan, J. (n.d.). Considerations for Accommodating Visually Impaired Pedestrians at Roundabouts, Institute for Transportation Engineers. http://www.ite.org/Membersonly/annualmeeting/2010/AB10H1002.pdf
16. Smart Transportation Guide, Planning and Designing Highways and Streets that Support Sustainable and Livable Communities. Chapter 6. http://www.state.nj.us/transportation/community/mobility/pdf/smarttransportationguidebook2008.pdf
17. Federal Highway Administration (FHWA). Proven Safety Countermeasures. http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_0

SUCCESS STORIES

San Diego, California: La Jolla Boulevard

A string of five roundabouts along this road in the Bird Rock neighborhood has allowed the city to reduce the road from five vehicle lanes to two, while also cutting travel time, adding on-street parking, attracting new businesses and still moving 23,000 vehicles a day. The number of people walking went up, noise pollution plummeted and the increase in walking, bicycling and street life is bringing new business to retailers.

Hamburg, New York: Route 62

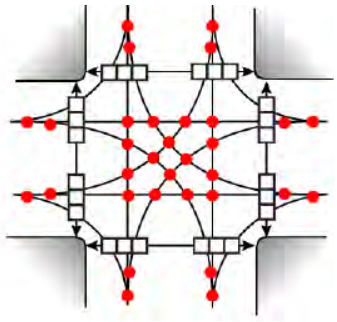
By the 1990s, business had declined along the Route 62 commercial district. Empty storefronts pushed shoppers out to malls and big box stores. The road was often congested and presented hazards for cyclists and pedestrians. A state plan emphasized wider roads and signalized intersections. But a group of residents banded together as the "Route 62 Committee" and created a new vision for Route 62 based on walkability and calmer traffic. Roundabouts have reduced the number and severity of crashes, congestion has been eased and emissions from idling cars have been reduced.

Bradenton Beach, Florida: Bridge Street

One pedestrian per year was being killed at the intersection of Bridge Street and North Gulf Drive. With 18,000 cars and trucks moving daily, the traffic on this street separated residents and visitors from the beach. People could see the beach, but they could not walk to it without taking severe risks. A roundabout was built and the police chief reports there hasn't been a recorded crash of any type since. With many more people walking to the beach, parking eased, and the roundabout became one of the nation's first to kick-start downtown reinvestment, which is now bustling with pedestrians, new homes and retail activity.

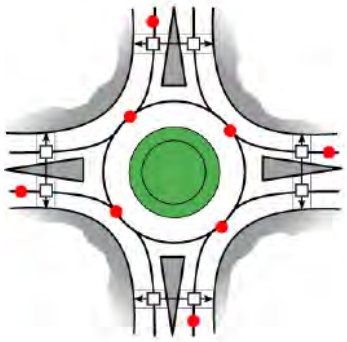
WHY IT WORKS

As the illustrations below demonstrate, roundabouts harbor far fewer potential conflict points than conventional intersections, making streets safer for all users.



32 vehicle-to-vehicle conflict points

24 vehicle-to-person conflict points



8 vehicle-to-vehicle conflict points

8 vehicle-to-person conflict points

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2. **Technical Summary: Roundabouts**, FHWA. http://safety.fhwa.dot.gov/intersection/roundabouts/fhwasa10006/fhwasa10006.pdf
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4. **Roundabouts: An Informational Guide,** FHWA, Lee August Rodegerdts, National Research Council (U.S.). Transportation Research Board, National Cooperative Highway Research Program, American Association of State Highway and Transportation Officials, 2010
5. **Geocoded National Roundabout Database**. http://roundabouts.kittelson.com/
6. **Roundabout Benefits**, Washington State Department of Transportation. http://www.wsdot.wa.gov/safety/roundabouts/
7. **Insurance Institute for Highway Safety**. http://www.iihs.org/
8. **Proven Safety Countermeasures**, FHWA. http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_0

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Road Diets

A LIVABILITY FACT SHEET

Most drivers base their travel speed on what feels comfortable given the street design. The wider the road, the faster people tend to drive and, the faster the car, the more severe the injuries resulting from a crash.[1] Research suggests that injuries from vehicle crashes rise as the width of a road increases.

To protect both pedestrians and drivers, many communities are putting their roads on "diets" by reducing street widths and vehicle lanes. The gained space is being reallocated toward other ways of getting around — such as walking, bicycling and public transit.

The most common road diet involves converting an undivided four-lane road into three vehicle lanes (one lane in each direction and a center two-way left-turn lane).[2] The remaining fourth lane space can be used to create such features as bicycle lanes, pedestrian crossing islands, bus stops, sidewalks and on-street parking.[3]

Road diets work best on streets that have daily traffic volumes of 8,000 to 20,000 vehicles. When done properly, a road diet improves the performance and efficiency of the street and makes it safer for all users.

For instance, by having pedestrians walk across only one lane of traffic at a time — rather than up to four or more — a road diet reduces the risk of crashes and serious injuries. At the same time, motorists experience a shorter delay while waiting at traffic lights and other crossings.[4]

A road diet can help a neighborhood become a more desirable place to live, work and shop, which in turn can be a boost to businesses and property values.

Wider sidewalks lined by trees and dotted with benches, bicycle racks, streetlights and other useful additions help create a lively, attractive streetscape. Bike lanes, on-street vehicle parking, curb extensions and "parklets" (tiny parks created from former parking spots) can be used to provide a buffer between people who are walking and motor vehicles on the move.

1. Federal Highway Administration, *Proven Safety Countermeasures*. Retrieved March 4, 2014, http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_013.pdf
2. Safe Routes to School National Center (November 2013), "Safe Routes to School Online Guide." http://guide.saferoutesinfo.org/engineering/tools_to_reduce_crossing_distances_for_pedestrians.cfm#diet
3. Tan, C.H. Federal Highway Administration, FHWA-HRT-11-006. Vol. 75, No. 2. (September/October 2011), "Going on a Road Diet." *Public Roads*, http://www.fhwa.dot.gov/publications/publicroads/11septoct/05.cfm

A road diet on East Boulevard in Charlotte, N.C., reduced travel speeds, bicycle and pedestrian injury rates and the number of rear-end and left-turn collisions. (Photo courtesy city of Charlotte)

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "Road diets divert traffic."

Drivers tend to use primary roads that provide the most direct and efficient route to a destination. Well-designed road diets do not divert drivers onto other roads. While traffic often drops during construction, it typically returns to normal or increases within six months of completion. Many roads actually experience an increase in vehicle traffic after a successful diet.[5]

■ "Road diets increase congestion."

On roads used by fewer than 20,000 vehicles per day, road diets have a minimal or positive impact on vehicle capacity. Left-turning vehicles, delivery trucks, police enforcement and stranded vehicles can move into a center lane or bike lane, which eliminates double-parking and reduces crash risks.[6]

■ "Road diets increase crashes."

Road diets actually reduce rear-end collisions and sideswipe crashes by slowing vehicle speeds by 3 to 5 mph. Road diets decrease by 70 percent the frequency of people driving more than 5 mph over the speed limit. Data collected on road diets in two very different settings (several small towns in Iowa and a group of larger cities and suburbs in California and Washington state) confirmed that road diets improve safety. The research showed a 47 percent reduction in crashes in the Iowa towns and a 19 percent drop in crashes in the more heavily traveled corridors of California and Washington.[7]

■ "Road diets aren't good for public transit."

Transit conflicts can be avoided with good planning, such as incorporating a center lane so motorists can move around stopped buses and adding side pull-out bays for buses.[8,9]

■ "Road diets are bad for business."

Road diets increase and enhance business activity by reducing traffic speeds (which helps motorists notice the shops, eateries and businesses they're driving alongside) and by accommodating pedestrians and bicyclists (who, by the way, tend to spend more money at local businesses than drivers do).[10] Road diets often create more street parking spaces, which is helpful to businesses. In addition, the slower speeds, better sight lines and narrower lanes are safer for both drivers and non-drivers (aka customers), and center-turn lanes provide motorists with an easier and safer way to make right and left turns, including for entering and exiting driveways. [11]

■ "Road diets are being reversed."

With thousands of road diets completed nationwide, there are few reports of any being reversed. On the contrary, road diets are proving to be effective, safe and popular. Interest among transportation engineers and planners is booming as handbooks, guidelines and other resources become available.[12]

■ "Road diets slow down emergency responders."

By not using short speed humps and stop signs, a road diet can accommodate emergency vehicles without increasing response times.[12] Drivers can pull into bicycle lanes to move out of the way, and a center-turn lane can be used by responders needing to pass other vehicles.[13]

■ "People don't like road diets."

The Electric Avenue road diet in Lewistown, Pa., was opposed by 95 percent of residents when it was first proposed; after completion, nearly 95 percent of residents are supportive of the changes.[14]

4. Burden, D., Lagerway, P., Walkable Communities, Inc. (March 1999), *Road Diets: Fixing the Big Roads*, http://www.walkable.org/assets/downloads/roaddiets.pdf
5. Tan, C.H. Federal Highway Administration, FHWA-HRT-11-006, Vol. 75, No. 2 (September/October 2011), "Going on a Road Diet". *Public Roads*. http://www.fhwa.dot.gov/publications/publicroads/11septoct/05.cfm
6. Burden, D., Lagerway, P., Walkable Communities, Inc. (March 1999), *Road Diets: Fixing the Big Roads*. http://www.walkable.org/assets/downloads/roaddiets.pdf
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9. Smith, G. et al. Knoxville Regional Transportation Planning Organization (July 2009), *Complete Streets Design Guidelines*, http://www.knoxtrans.org/plans/complete_streets/guidelines.pdf
10. Krag, T. Aalborg University, Denmark, paper (2002), *Commerce and Bicycles*
11. Tan, C.H. Federal Highway Administration, FHWA-HRT-11-006. Vol. 75, No. 2. (September/October 2011), "Going on a Road Diet". *Public Roads*, http://www.fhwa.dot.gov/publications/publicroads/11septoct/05.cfm

HOW TO GET IT RIGHT

This four-lane road in Redondo Beach, Calif., is not pedestrian or bicycle friendly and the road's traffic volumes doesn't justify having four vehicle lanes.

A transformation like the one seen here increases safety, parking, pedestrian and bicycle access and helps to create a people-friendly sense of place.

The success of any tool lies in getting it right, and this is certainly true of road diets. Try the following:

■ Engage the public

Road diets are a new concept in many communities. Involve the public as soon as possible during the discussions and planning to minimize any anxiety about the unknowns and to give residents ownership of the road diet goals.

■ Embrace a public process and build support

Develop an education and awareness campaign prior to implementation, and reach out broadly to community members, elected officials and municipal leaders. Government officials may need to see public support before acting. Toward that end, advocates can share this fact sheet, talk to neighbors, build community support and then meet with decision makers, the media, experts and others to discuss the benefits of road diets. Agency staff can engage the public by hosting workshops to build public acceptance and understanding.

■ Start with a pilot project

Consider launching a pilot road diet in an area that has light traffic. This will give drivers a chance to get comfortable with the concept and allow municipal staff to document what works and what doesn't.

■ Target areas that are ripe for reinvestment

Locate a pilot project on a road that carries no more than 15,000 vehicles a day and that ideally serves a downtown neighborhood or historic district with potential for reinvestment and/or economic development.

■ Document the change

Before, during and after the project is built, observe and record what's happening. The information can make it easier to conduct future road diets at higher traffic counts. In addition to traffic flow monitoring, document any increases in walking, bicycling, transit use and retail activity.

■ Utilize clear signage

During and even after completing a road diet project continue to use signage and markings to highlight and explain any features that might be unfamiliar.

■ Design it well

There is no one-size-fits-all design for a road diet. Make sure what you create fits the traffic volume, the road's physical location and the community's shared goals.

12. Rosales, J. Parsons Brinckerhoff (July 2009), *Road Diet Handbook: Setting Trends for Livable Streets*, http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=LP-670; and Walkable Streets (August 2003), *Economic Merits of Road Diets and Traffic Calming*, http://walkablestreets.wordpress.com/2003/08/17/economic-merits-of-road-diets-and-traffic-calming/
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14. Burden, D., Lagerway, P., Walkable Communities, Inc. (March 1999), *Road Diets: Fixing the Big Roads*. http://www.walkable.org/assets/downloads/roaddiets.pdf

SUCCESS STORIES

Orlando, Florida: Edgewater Drive

A 1.5-mile section of Edgewater Drive in the College Park neighborhood of Orlando was put on a road diet in 2000, converting four lanes to two. The results: 34 percent fewer crashes and 68 percent fewer injuries. Speeds decreased by up to 10 percent. Property values increased 8 to 10 percent in residential areas and 1 to 2 percent for commercial areas. Travel times through the corridor sped up by 25 seconds even with an increase in traffic volume. There was a nearly 40 percent increase of on-street parking, and walking and bicycling rates rose by 56 and 48 percent, respectively.

Seattle, Washington: Stone Way North

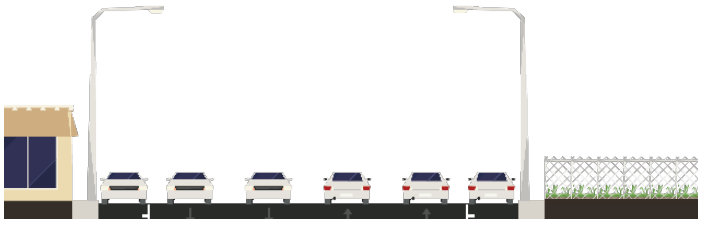
In 2008, a road diet was completed on a 1.2-mile section of Seattle's Stone Way North. The four-lane roadway carrying 13,000 vehicles per day was turned into a two-lane roadway with a center-turn lane, bicycle lanes and parking on both sides. Speeds on the road decreased, but drivers did not divert to other areas in search of alternate routes. Two years of crash data showed an overall decrease of 14 percent, injury crashes dropped by 33 percent and angle crashes dropped by 56 percent. Bicycle volume increased 35 percent (to almost 15 percent of the peak hour traffic volume), yet the bicycle collision rate showed no increase. Pedestrian collisions decreased 80 percent.

Athens, Georgia: Baxter Street

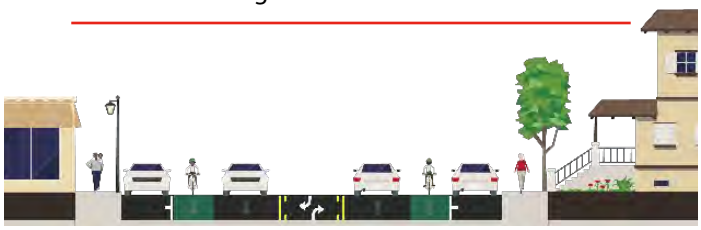
A road diet conversion on an arterial with 20,000 vehicles daily resulted in crashes dropping 53 percent in general and 60 percent at unsignalized locations. Traffic diversion was less than 4 percent, and 47 percent of the road's users perceived the number of lanes and street width as being "just right." (One-third were unsure and 20 percent were unhappy.) Baxter Street was converted from four lanes to two with a center lane and bicycle lanes on both sides.

HOW IT WORKS

The most common type of road diet converts four lanes of traffic into three lanes consisting of two travel lanes and a center left-turn lane. The configuration opens up space for adding such features as bicycle lanes, on-street parking, pedestrian buffers and sidewalks.



BEFORE: This roadway is designed primarily for motor vehicles. Wide, multiple travel lanes encourage faster speeds. The likelihood of lane changes increases the risk of crashes.



AFTER: A road diet opens up space for bike lanes, wider sidewalks, landscaping and pedestrian-scale lighting, all of which increase a community's ability to attract new development along the roadway. Narrower, single travel lanes encourage moderate and slower speeds that reduce crash risks.

RESOURCES

1. **Los Angeles County Model Design Manual for Living Streets.** (2011) http://www.modelstreetdesignmanual.com/
2. **Road Diet Handbook: Setting Trends for Livable Streets.** Available for purchase from Institute for Transportation Engineers, http://bit.ly/RCo4sw
3. **"Rightsizing Streets."** Project for Public Spaces, http://www.pps.org/reference/rightsizing/
4. **The Safety and Operational Effects of Road Diet Conversion in Minnesota.** http://www.cmfclearinghouse.org/study_detail.cfm?stid=68
5. **Proven Safety Countermeasures.** http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_013.pdf
6. **Evaluation of Lane Reduction "Road Diet" Measures on Crashes**. Highway Safety Information System, http://www.fhwa.dot.gov/publications/research/safety/10053/10053.pdf
7. **"Moving Beyond the Automobile."** Streetfilms, road diet video featuring Dan Burden on Vimeo: http://vimeo.com/21903160

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Economic Development

A LIVABILITY FACT SHEET

For many years, public transit, bicycle lanes, trails and sidewalks have suffered from a lack of investment. The consequences are congestion, inactivity and obesity, as well as more air pollution and traffic crashes and a loss of economic vitality.

If current trends continue, total U.S. costs resulting from obesity are expected to be as high as $957 billion by 2030.[1] The price of poor air quality due to transportation is predicted to be between $50 billion and $80 billion a year.[2] Expenses from traffic crashes in urban areas are expected to exceed $299 billion annually,[3] with congestion costs adding $121 billion or more to the bill each year.[4]

A more balanced transportation system is needed or these costs will continue to climb and undermine the nation's economic health and quality of life.[5] One study estimates that if the U.S. would grow in a more compact way between 2000 and 2025, the country could save $110 billion in local road costs.[6]

A more balanced transportation system saves and earns money. For instance, bicycle infrastructure creates an average of 11.4 jobs for every $1 million spent while road-only projects create 7.8 jobs per $1 million.[7] After slowing traffic and improving bicycling on Valencia Street in San Francisco's Mission District, nearby businesses saw sales increase by 60 percent, which merchants attributed to increased pedestrian and bicycle activity.[8]

Houses with above-average levels of walkability command a premium of about $4,000 to $34,000 more than homes with average levels of walkability.[9] A 1999 study by the Urban Land Institute of four new walkable communities determined that home buyers were willing to pay $20,000 more for the houses than they would for similar homes in less walkable areas.

A nationwide survey by Smart Growth America of 17 development studies concluded that dense, mixed-use development costs 38 percent less than conventional suburban development on average, generates 10 times more tax revenue per acre and saves municipalities an average of 10 percent on public services such as police, ambulances and firefighting.[10]

1. American Heart Association. *Statistical Fact Sheet 2013 Update.* https://www.heart.org/idc/groups/heart-public/@wcm/@sop/@smd/documents/downloadable/ucm_319588.pdf
2. Federal Highway Administration. (2000) Addendum to the 1997 Federal Highway Cost Allocation Study Final Report (adjusted to 2008 dollars), www.fhwa.dot.gov/policy/hcas/addendum.htm

This block in Kingston, Wash., is located between a strip mall and the street. Prior to it being built, there was just a large surface parking lot. Now there's retail on an active street front and still adequate parking.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "Investing in downtown is expensive, the suburbs are cheaper to develop."

Revenue-starved cities can garner far more taxes per acre from downtown multistory buildings than from strip malls and housing subdivisions. And in the next 20 years, the needs and preferences of aging baby boomers, new households and one-person households will drive real estate market trends. Downtown locations are likely to attract many of these people.[11] Asheville, N.C., has a big box retail store less than three miles east of its downtown. The tax value of the store is $20 million, but it sits on 34 acres of land, yielding about $6,500 an acre in property taxes. A remodeled department store in downtown Asheville generates $634,000 in tax revenue per acre.[12]

■ "Big box retailers bring big revenues to our town."

Big box retail encourages sprawling land uses, automobile dependence and the paving of large tracts of land. The stores contribute to the decline of urban and neighborhood centers because they pull retail activity out of central business districts and into the urban fringe. As local businesses close, residents increasingly use automobiles and travel farther to shop. Several studies have found that for every job created at a big box store one to two existing jobs in the community are destroyed.[13] A University of Massachusetts study found that income spent on a locally owned business had four to five times the local economic impact of a big box store does. Further, when a big box store closes, the community is left with a huge, unappealing building with limited reuse options.

■ "Narrow roads hurt business."

By reducing traffic speeds and accommodating people who are walking and bicycling, narrower roads are one of the best ways to increase retail revenues. This technique, called a "road diet," can even create more on-street parking spaces. The slower speeds provide drivers with better sight lines and make streets, entrances and exits easier to negotiate.[14]

■ "We need more parking lots, not less."

In Portland, Ore., property values and customer volume in parking-restricted areas near transit stations are higher than in other areas, and the properties sell and rent quickly even without dedicated parking spaces. An off-street parking space costs between $3,000 and $27,000 to build and about $500 a year to maintain and manage. On-street parking is more efficient and can bring in as much as $300,000 per space in annual revenues.[15]

■ "Cars bring more business than walking or bicycling."

Walkers and bicyclists tend to spend more money at local businesses than drivers do.[16] Bicycle- and pedestrian-friendly streets boast slower speeds that allow drivers to more easily see business storefronts. The North Carolina Department of Transportation found that although bicycle facilities in the Outer Banks cost $6.7 million to build, they bring an annual economic gain of $60 million and 1,400 jobs created or supported. After the installation of protected bicycle lanes on New York City's 8th and 9th avenues in the fall of 2007, retail sales increased up to 49 percent compared to 3 percent in the rest of Manhattan.[17]

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HOW TO GET IT RIGHT

Investments in mixed-use development, such as this downtown square in Arcata, Calif., can pay back 10 times more than a big box or strip center development.

Walkability tends to keep money local, attract shoppers, lower health costs and produce jobs, such as for this new sidewalk in Houston, Texas.

Because economic development can make or break a community, it's important to get it right. Try the following:

■ Embrace placemaking

Strong networks of streets and destinations foster social networks, interaction and strong economies. But great places can only exist when people choose to participate in creating them. That's why architects, designers, planners and engineers need to move beyond shaping cities through the lens of their professional disciplines and instead partner with residents, advocates and people who work in transportation, economic development, parks and health agencies. Engaging the people who will be living in or using the end result provides a larger vision for the space and community.

■ Small projects, big results

Consider doing a simple, low-cost project first, such as striping a bike lane. This will give people a chance to get comfortable with the concept and allow municipal staff to document the outcome. Sidewalk cafes, striped crosswalks and community gardens are improvements that can be done quickly and foster economic growth.

■ Focus on downtown

From villages to cities, downtowns have traditionally been the heart of a community, a place where people work, shop, socialize, volunteer and often live. In recent decades downtowns in America have suffered from the proliferation of enclosed malls, strip malls, big box retail outlets and office parks at the urban edge. Dedicate efforts on revitalizing the downtown core with walkable, mixed-use development and destinations.

■ Utilize form-based code

Form-based code offers a powerful alternative to conventional use-based zoning by addressing the relationship between building facades and the public space the shape and size of buildings in relation to one another and the size and types of streets and blocks. The codes are adopted into city or county law and are drafted to implement a community plan.

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SUCCESS STORIES

■ Portland, Oregon: Economic Dividend

By enacting a growth boundary, increasing density, introducing mixed land uses and investing in transit, walking and biking, Portlanders are saving time and money on transportation. (More than $2.6 billion has been funneled back into the local economy.) Portland area residents travel about 20 percent fewer miles every day, or 8 million less miles per day, compared to other large metropolitan regions. (Vehicle miles traveled per person per day peaked in 1996.) A commitment to smart growth policies and the prevalence of walkability has attracted people and business to the region. In one decade the number of college educated 25 to 34 year-olds increased by 50 percent, which is five times faster than in the nation as a whole. Even design elements such as street trees can raise property values. Trees on the street in front of Portland homes add more than $7,000 to selling prices.[18]

■ West Palm Beach, Florida: Clematis Street

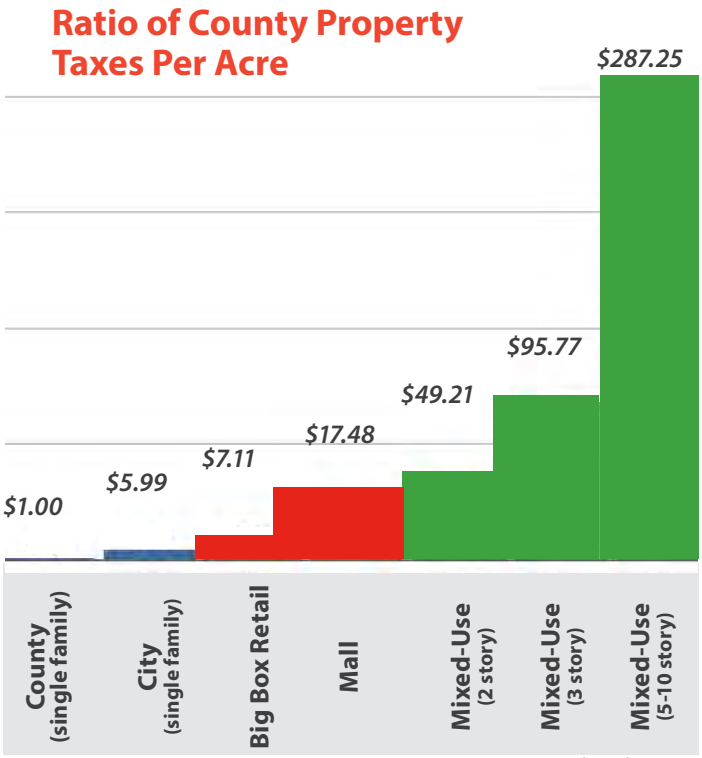
A once-lively Main Street anchored by a plaza, library and waterfront on one end and a historic train station on the other, Clematis Street was only 30 percent occupied in 1993. After a $10 million traffic-calming project rebuilt a fountain, restored key buildings and provided for event spaces, property values on the street doubled, $350 million in private investment came to the area and more than 80 percent of the building space became occupied. As traffic slowed, social links between neighbors increased, trash along the streets disappeared, and the area evolved from abandoned to alive. The average home sale price increased from $65,000 to $106,000.

■ Lancaster, California: Lancaster Boulevard

The redesign of its main boulevard helped transform downtown Lancaster into a thriving residential and commercial district by adopting a form-based code, streetscaping, new public facilities, affordable homes and local businesses. The project won the EPA's top smart growth award and has generated almost $300 million in economic output and nearly 2,000 jobs.

WHY IT WORKS

As this chart comparing data from 30 cities across 10 states shows, for every dollar in property taxes raised by a county for a single family home, $5.99 was raised for a city home within the county and up to $287.25 was raised for valuable five- to 10-story mixed-use properties.



Source: urban-three.com

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Street Trees

A LIVABILITY FACT SHEET

"The best time to plant a tree was 20 years ago. The second best time is now," says a wise Chinese proverb. In a neighborhood setting, street trees provide shade, safety, greenery, storm mitigation, energy savings, fresh air and a haven for songbirds and squirrels. Trees visually screen concrete and utility poles and quiet street noise.[1]

The U.S. Forest Service estimates that the presence of street trees increases adjacent home values by an average of $13,000.[2] That premium boosts a city's tax base and can help cover the operating costs of street tree maintenance. The National Main Street Center reports that a good tree canopy can increase retail sales by 12 cents on the dollar in large cities and 9 cents on the dollar in small ones.[3]

Trees are also good for our health. Vehicle exhaust increases ozone and causes asthma and other medical problems. Trees convert these harmful gasses into oxygen. In fact, a single urban street tree converts enough carbon monoxide and carbon dioxide into oxygen to meet the oxygen needs of two people for a full year.[4]

Trees planted in roadway divider strips or tree wells physically separate vehicles from pedestrians and help drivers distinguish the boundary between the street and adjacent areas where people walk. In addition, a well-developed tree canopy can reduce traffic speeds by 5 to 15 mph, which improves safety for all road users.[5]

Street trees reduce storm water runoff and flooding. (Here's an interesting fact: Trees absorb 30 percent of the precipitation through their leaves and another 30 percent through their roots.[5])

Pavement can cause temperatures to rise 3 to 7 degrees, which increases energy costs and the presence of harmful ozone and other gases. Tree shade can lower energy bills by up to 35 percent, especially when a street is shaded by a mature tree.[6]

Studies conducted in California found that tree shade can improve the lifespan of street surfaces by up to 60 percent. Since daily temperature fluctuations between heating and cooling are reduced, the damaging expansion and contraction of asphalt and concrete decline as well.[7]

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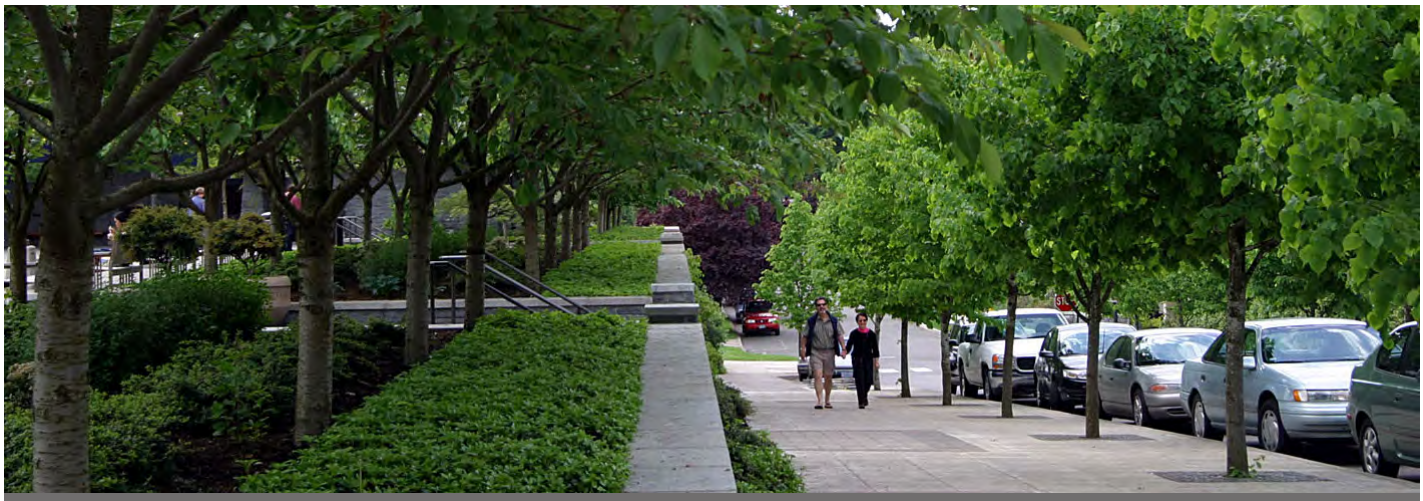

Trees were planted as part of a downtown revitalization project in suburban Lake Oswego, Ore., that included sidewalks, new lighting, art installations, a pedestrian plaza, water fountain and traffic circle.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "Street trees are dangerous."

Studies document that motorists respond to vertical walls of greenery by driving more slowly, which makes pedestrians and motorists safer.[8] Street safety comparisons show a reduction of run-off-the-road crashes and overall crash severity when stretches of a road with street trees are compared with similar segments that have no trees.

Trees also buffer pedestrians from moving vehicles. One Texas study found a 46 percent decrease in crash rates across urban arterial and highway sites after landscape improvements were installed.[9] The presence of trees in a suburban landscape reduced the cruising speed of drivers by an average of 3 mph.[10]

■ "Planting a tree anywhere produces the same health benefits."

U.S. Forest Service research suggests that urban trees may be 10 times as effective as forest trees for lowering carbon dioxide. Urban pollutants such as ozone, chlorine, fluorine, peroxyacetylnitrate and sulphur dioxide are all absorbed by trees.[11]

■ "Trees are expensive."

For a planting and three-year maintenance cost of $250 to $600, a single street tree returns more than $90,000 of direct benefits, not even including the aesthetic, social and natural benefits provided during the tree's lifetime. A well-planted and cared-for tree can thrive for 60 years or more.[12] The real estate premium from street trees boosts a city's tax base and can cover the operating costs of street tree maintenance.

For instance, New York City's 2006 tree census found that its 592,130 street trees provided an estimated $122 million in benefits annually. A goal of the city's 2007 PlaNYC initiative is to plant another 220,000 street trees by 2017.[13]

Washington, D.C., estimates the benefit of its street trees at $10.7 million annually.[14] A University of California at Davis study found that 20 percent shade on a street improves pavement conditions by 11 percent, which provides a 60 percent resurfacing savings over 30 years.[15] When streets have no shade, the sun's heat breaks down the paving binder and produces more heating and shrinking, which wears out the pavement. Shade increases pavement life by up to 60 percent, far offsetting the cost of tree maintainance[16] and the occasional cost of repairing damage caused by tree root growth.

■ "Trees are the cause of damage by storms."

Proper selection, spacing and trimming of trees, along with well-planned utilities, will reduce the impact of major storms. A line of mature trees, carefully chosen and planted, provides protection from fragile or isolated trees that fall.[17]

■ "Trees create a mess."

Trees can be selected that produce minimal autumn leaf droppings and other annoyances. (However, municipal policies should include procedures for efficient leaf removal.) Some species of trees attract songbirds, which can be a pleasant addition to an area. Although rare, some trees can attract such large congregations of birds that they become an annoyance. Thoughtful tree selection and management can limit specific bird populations or keep large groupings away.[17]

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HOW TO GET IT RIGHT

A tree canopy provides beauty and shade in Fargo, N.D.

Tree wells add greenery in Valencia Town Center, Calif.

The success of any tool lies in getting it right, and this is true of street trees. Try the following:

■ Engage the public and build support

Due to the many misperceptions about street trees, it's important to involve the public at the earliest possible point of discussions in order to minimize anxiety about the unknowns and give citizens ownership of the goals. Print this fact sheet, talk to neighbors, build community support and then meet with decision makers, news outlets, experts and others to discuss the benefits of street trees.

■ Choose the right trees

There are street tree varieties for all climate zones, including semi-arid and arid conditions and even mountain communities above 9,000 feet. The proper selection and planting of trees in boxes reduces sidewalk repair costs and potential damage to utilities in urban neighborhoods.

■ Place trees correctly

When properly positioned and maintained, a backdrop of street trees can draw a motorist's eye to traffic signals and signs. However, the trees must be carefully positioned to allow adequate sight lines at intersections and driveways. Street trees should be placed 15 to 30 feet apart, or as far apart as 50 feet apart in urban locations. Trees should also be spaced to allow for illumination from street lights and so not to interfere with above- or below-ground utility lines.

■ Maintain trees properly

Tree maintenance is an added cost but one that is more than offset by the positive impact trees have on a community's tax base. It is important to properly maintain trees, including repairing occasional sidewalk damage from growing tree roots. It's also important to keep the majority of leaves cleared from the street since fallen leaves can clog drains during storms. In some climates piles of leaves that are left unattended over time can produce airborne spores that cause problems for allergy sufferers.

■ Plant in tree wells if sidewalk space is limited

If there's insufficient space for trees alongside a sidewalk, use a tree well instead. (See the photo at top.) Depending on the amount of parking needed, desired visual pattern and tree density, wells can be placed 40 to 60 feet apart, which allows two to four parking spaces in between. The wells must be wide enough to prevent vehicles from backing into trees.

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SUCCESS STORIES

Shreveport, Louisiana: NeighborWoods

Despite Shreveport's location in a wooded part of the state, many community members were unaware of the benefits and value of a good tree canopy. Compounded by sustained tornado and ice storm damage in the years 2010 to 2013, and severe droughts during the summers of 1999 to 2005, many neighborhoods were practically devoid of trees. Help came from the nonprofit organization Shreveport Green and their work with NeighborWoods, a national program dedicated to reforesting city greenspaces. Beginning in 2006 student-led volunteers planted more than 20,000 trees in Shreveport, with a particular focus on three at-risk neighborhoods that had moderate to severe crime rates and a lack of community cohesion. By increasing the canopy cover, Shreveport Green offered residents a cooler and more attractive environment, which encouraged them to mingle outside and positively interact with their neighbors. The effort produced a cost benefit to Shreveport of $7.28 for every dollar spent.

Charlotte, North Carolina: Stately Trees

In 1985 the Charlotte planned major renovations of downtown thoroughfares, including 10 blocks of Tryon Street and two blocks of Trade Street. Since the city wanted large stately trees in its downtown area, a suspended precast concrete pavement system was installed, supported by earthen trench sidewalks and topped with non-permeable pavers. A total of 170 willow oak trees were planted and by 2009 they had grown to an average height of 44 feet, which resulted in a 10 percent reduction in peak storm flows to the city's storm water system. Once famous for cotton mills and gold mines, Charlotte is now known for its natural beauty and spectacular canopy of trees.

WHY IT WORKS

THE VALUE OF Urban Forests

urban forest = the trees, plants and natural resources within a town or city

12-1/2 trees can intercept an Olympic-sized swimming pool worth of stormwater annually.

Trees in urban forests support 60,000 California jobs annually.

177 million trees shading homes and buildings reduce air conditioning energy use by 6.4 billion kilowatt hours. (It takes 73 100-megawatt power plants to produce that much energy.)

Homes, goods and services sell for 12 percent more in communities with trees than in those without trees.

Source: California ReLEAF (*californiareleaf.org/whytrees*)

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Bicycling

A LIVABILITY FACT SHEET

Half of all trips taken in the United States are three miles or less, yet most Americans drive — even to the closest destinations. Only 3 percent of commuting trips in the U.S. are by bicycle, compared to up to 60 percent in The Netherlands.

Still, it's not unreasonable to believe we can improve our numbers. The popularity of bicycling has been on the rise. The number of bike trips doubled between 1990 and 2009, and many communities and the federal government are embracing the bicycle as a transportation solution for a healthy and viable future.[1]

Surveys show that 60 percent of Americans would ride a bicycle if they felt safe doing so, and eight out of 10 agree that bicycling is a healthy, positive activity.

Although issues related to bicycling continue to be debated, experience shows that bicycle-friendly features increase safety for all road users, including motor vehicles.[2]

In 2010, New York City removed a traffic lane and painted a two-way bicycle path with a three-foot parking lane buffer alongside Brooklyn's Prospect Park. Weekday bicycling traffic tripled, speeding by all vehicles dropped from 74 to 20 percent, crashes for all road users dropped 16 percent and injuries went down 21 percent, all without a change in corridor travel time.[3] Throughout New York City, deaths and serious crashes are down 40 percent where there are bike lanes.[4]

Bicycling also provides economic benefits: Two-thirds of merchants surveyed on San Francisco's Valencia Street say that bike lanes have improved business. In North Carolina's Outer Banks, bicycle tourism has already generated $60 million in annual economic activity on its $6.7 million bicycle infrastructure investment. In 2009, people using bicycles spent $261 million on goods and services in Minnesota, supporting more than 5,000 jobs and generating $35 million in taxes.[5]

Building bike infrastructure creates an average of 11.4 jobs for every $1 million spent. Road-only projects create 7.8 jobs per $1 million.[6] The average American household spends more than $8,000 a year on its cars; the cost to maintain a bicycle is about $300 a year.[7]

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This path in New Smyrna Beach, Fla., is part of a Volusia County plan to link schools, parks and businesses through interconnected paths. Fifteen miles were completed by 2012 with overwhelming public support. (Image: bikeflorida.net.)

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ **"Bicyclists don't follow rules."**
While there are bicyclists who do break the law, a large Federal Highway Administration study found that motorists failed to yield the right of way in 43 percent of crashes; bicyclists were at fault 36 percent of the time.[8] Since the 1982 passage of Idaho's "stop as yield" law, which allows cyclists to treat stop signs as yield signs, there has been "no discernible increase in injuries or fatalities," according to the Idaho Department of Transportation.[9]

■ **"Bicyclists don't pay their fair share."**
All road users — cars, trucks, bicycles, pedestrians, buses, light rail — are subsidized to some extent by society at large. Funding for U.S. roadways comes partly from vehicle taxes, fuel taxes and tolls, which together account for up to 60 percent of direct costs. General taxes and fees pay the remaining 40 percent. The federal gas tax of 18.4 cents per gallon has not been raised since 1992. Cars, buses and trucks impose much higher maintenance and capital costs on roads than bicycles do, and they benefit from subsidies that are not directly paid by motorists.[10] In 2009, the Seattle Department of Transportation paid only 4 percent of its road expenses with the gas tax while non-motor vehicle funds paid for the rest.[11] Motor vehicle crash injuries cost society $99 billion in 2010 due to medical expenses and lost productivity.[12] Pedestrians and bicyclists bear a larger share of costs than they impose.[13]

■ **"Bicycling is only for middle-class white males in Spandex."**
Six in 10 young bicycle owners are women, eight out of 10 American women have a positive view of bicycling and two out of three believe their community would be a better place to live if biking were safer and more comfortable. Between 2001 and 2009, the fastest growth in bicycle use in the U.S., from 16 to 23 percent, occurred among self-identified Hispanics, African-Americans and Asian-Americans, 86 percent of whom have a positive view of bicyclists.[14]

■ **"Bicycling is too dangerous."**
Bicycling does tend to have higher fatality rates per mile than motorized travel, but a typical motorist drives five to 10 times more miles than a typical cyclist. Bicycling risk can be significantly reduced through improved infrastructure and a greater numbers of bicycles on the road.[15] Bicycling also imposes minimal risk to other road users and provides significant health benefits that can offset crash risks.[16] There were no bicycling fatalities in bicycle-friendly Portland, Ore., in 2013 even though bicycling accounts for at least six percent of all trips. By comparison, 21 people were killed inside motor vehicles that year.[17]

■ **"Bicyclists slow down cars and create congestion."**
Average traffic speeds in Manhattan's primary central business district south of 60th Street has increased nearly seven percent since the installation of bike lanes in 2008.[18] Bicycles take up less road space than motor vehicles and cyclists tend to avoid congested roads that don't have bike lanes.[19]

■ **"Bicycle lanes hurt business."**
After the installation of protected bike lanes on New York City's 8th and 9th avenues in the fall of 2007, retail sales increased 49 percent in those areas compared to 3 percent in the rest of Manhattan.[19]

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HOW TO GET IT RIGHT

Bicycle parking promotes riding. Racks can be placed on the street. One car parking space can hold 12 bikes.

This raised cycle track in Missoula, Mont., is an example of a grade-separated, protected bike lane.

To encourage bicycling and bicycle-friendly streets and communities, try the following:

■ Embrace a public process and build support

Develop an education and awareness campaign prior to implementation, and reach out broadly to community members, elected officials and municipal leaders. Government officials may need to see public support before acting. Toward that end, advocates can share this fact sheet, talk to neighbors, build community support and then meet with decision makers, the media, experts and others to discuss the benefits of bicycling. Agency staff can engage residents by hosting workshops to build acceptance and understanding.

■ Start with a pilot project

Do a simple, low-cost project, such as striping a bike lane in an area with high bicycling potential and an existing right of way. This can help residents become comfortable with bicycling and enable municipal staff to document what works and what doesn't. Promote the pilot as a road improvement project rather than only as a bicycle project.

■ Provide adequate bicycle parking

Bicycle racks encourage bicycling. Well-placed racks provide a secure place for parking bicycles while shopping, working or playing. Racks can be located inside buildings or bolted into sidewalks or even the street. A single parking space can hold up to 12 bicycles on staple racks (they look like an inverted "U" shape) mounted in a row.

■ Create routes and wayfaring signs

Develop a system of routes cyclists can follow to get around town safely. Install highly-visible wayfaring signs that indicate distances, destinations and street names and install signs at all important crossings.

■ Establish a bike share

More than 500 communities worldwide, including at least 50 in the U.S., have a short-term bicycle rental or "bike share" program.[20] (New York City and Washington, D.C., feature popular bike share networks.) People can join a share program for the day or a full year by paying a nominal fee. To participate, a rider checks out a bicycle from a computerized kiosk and then returns the bike at a share program rack near his or her destination.

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SUCCESS STORIES

■ Palo Alto, California: Bicycle Boulevards

Bicycle boulevards are low-volume, low-speed streets that have been optomized for bicycle travel. Palo Alto has an extensive network of paths, bike lanes and boulevards, including connections to schools throughout town. Data from the 2010 Census showed 7.1 percent of residents commuted to work by bicycle, an increase from 5.6 percent in 2000. The city continues to provide facilities, services and programs to promote travel by bicycle.

■ Indianapolis, Indiana: Cultural Trail

An eight-mile, $63 million walk-bike Cultural Trail was completed in May 2013, having been financed by both public and private dollars. The trail winds through the downtown of this automobile-oriented city (home of the Indy 500), connecting the city's center to a half-dozen emerging cultural districts, a 1.5 mile section of the historic Indianapolis Canal and to White River State Park, a former industrial wasteland now filled with museums, lawns and attractions. By April 2014 the trail had generated more than $864 million to the local economy.

■ Memphis, Tennessee: Broad Avenue

Bike lanes are part of the city's Broad Avenue Arts District initiative, which revitalized a struggling commercial and residential area. The project's popularity exploded when the focus was expanded to include bicycles. "The lanes slowed down traffic and people started noticing the businesses more," says Pat Brown, co-owner of T Clifton Art Gallery. "Our revenues have grown on average 30 percent per year. Yes, that's for an art-related business in a tough economy." The district has seen more than 15 new businesses and nearly 30 property renovations. Restaurants report a growth in business due to bicyclists.

WHY IT WORKS

Protected bike lanes can feel more comfortable and are safer, especially for beginners, seniors and children:

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Density

A LIVABILITY FACT SHEET

Compact, mixed-use communities are thriving. As the housing market imploded in the late 2000s, the neighborhoods that held their property values the best were those with a mix of land uses — housing, retail, restaurants and office space — all located within a walkable core.[1,2]

Many baby boomers and young adults are settling in walkable neighborhoods that offer a mix of housing and transportation options and close proximity to jobs, schools, shopping, entertainment and parks. A majority of Americans prefer such communities.[3]

The aging of the U.S. population and ongoing decline in the share of households with children will continue to boost the demand for smaller homes in more compact neighborhoods. From 1970 to 2012 the percentage of households consisting of married couples with kids plunged from 40 to 20 percent, while the share of homes with a single person living alone jumped from 17 to 27 percent.[4]

While most Americans say they want to live in a single-family home, 71 percent of Californians want to live in more compact, transit-oriented places. Nationally, 70 percent of people born between 1979 and 1996 prefer walkable, urban neighborhoods and don't believe they need to move to a suburb once they have children.[5] Researchers with the Federal Reserve Bank of New York even found that a doubling of an area's density increases worker productivity by up to 4 percent.[6]

Density and mixed-use development comes in a variety of forms — from small-lot detached homes to condo buildings and townhouses in a suburban town center to apartments located atop downtown retail shops. Regulation and site design practices such as form-based code[7] can transform urban, suburban and rural areas into livable, connected and thriving places that offer a range of transportation choices.[8]

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5. Nelson, A. Urban Land Institute. (2011) *The New California Dream: How Demographics and Economic Trends May Shape the Housing Market: A Land Use Scenario for 2020 and 2035.* http://www.uli.org/wp-content/uploads/2012/06/ULI-Voices-Nelson-The-New-California-Dream.ashx_1.pdf
6. Abel, J. et al., Federal Reserve Bank of New York Staff Reports, no. 440. (March 2010; revised September 2011) *Productivity and the Density of Human Capital.* http://www.newyorkfed.org/research/staff_reports/sr440.pdf

High Point, a former World War II-era public housing project in Seattle, Wash., is now an award-winning, sustainable, highly diverse neighborhood featuring a community center, library, medical clinic and dental clinic.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "Density just means big, ugly apartment buildings."

Density is generally defined as the amount of residential development permitted on a given parcel of land. In previous decades, density often meant large complexes that concentrated low-income housing or long rows of nearly identical suburban homes. Higher density projects can instead be townhouses, apartments, accessory units and live-work spaces that accommodate a broader range of lifestyles. These residences are in addition to, not instead of, single-family detached homes with front porches and small yards. Smart density also includes areas for parks and open space.[9]

■ "Density reduces property values."

Well-designed density actually increases property values — at two-to-four times the rate seen with conventional sprawl. Good locations for increased density are typically along principle roads or in clusters such as mixed-use villages.[10]

■ "Density breeds crime."

With good planning and design, high-density development helps populate streets and sidewalks, putting more "eyes on the street," which is a known crime deterrant.[11] Over the past 30 years, the city of Vancouver, British Columbia, has watched its downtown peninsula become one of the most densely developed urban areas in North America, yet the city has seen crime rates drop as density has increased.[12]

■ "Density brings traffic and parking problems."

By combining a mix of land uses (housing, businesses, schools, etc.) density brings daily destinations within an easy walk, bicycle ride or transit trip. People spend less time driving and looking for parking. Traffic counts fall with well-designed higher density development and make transit a viable option.[12]

■ "Density is worse for the environment."

Conventional subdivisions with single-family homes on large lots have a more harmful impact on natural systems than high-density areas. When land is developed compactly it leaves more green space for filtering stormwater runoff, providing wildlife habitats, absorbing carbon dioxide and reducing greenhouse gases. Since people in transit-supported dense areas walk more and drive less, density causes less — not more — air and water pollution.[12]

■ "Density places a burden on schools and public services."

People who choose high-density housing typically place less of a demand on schools and other infrastructure than those moving to conventional subdivisions with single-family homes on large lots. Compact urban areas require less expansive infrastructure, making them less costly than sprawl.[12]

■ "Rural towns can't benefit from density."

Many people are attracted to vibrant small towns that have higher population densities. In a 2013 survey in which 100,000 people nominated and voted for their favorite small towns, all but three of the 924 towns considered had a population density of more than 500 people per square mile.[13] Increasing a small town's density so it can feature the benefits of a more urbanized lifestyle can be key to the community's future success. If increasing density in the town core becomes a priority of the community's growth plan, it can decrease some of the negative effects of the kind of population loss common in many rural regions.[14]

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8. Larco, N. , Schlossberg, M. Oregon Transportation Research and Education Consortium. (January 2014) *Overlooked Density: Re-Thinking Transportation Options in Suburbia*. From http://www.otrec.us/project/152
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11. StreetsWiki. Eyes on the Street. Website. Retrieved March 7, 2014, http://streetswiki.wikispaces.com/Eyes+On+The+Street
12. National Multi Housing Council, American Institute of Architects, Urban Land Institute. (2005) *Higher Density Development Myth and Fact*. http://www.nmhc.org/files/ContentFiles/Brochures/Myth%20and%20Fact%20FINAL.pdf
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14. Federal Reserve Bank of St. Louis. (2013) Increasing Density: A Small-Town Approach to New Urbanism. http://www.stlouisfed.org/publications/br/articles/?id=2451

HOW TO GET IT RIGHT

Nine residences sit above storefronts in Davis, Calif., which has a population of about 6,600 people per square mile.

Street life is adundant in Davis. People walk and bicycle for fun, exercise, to run errands and get around.

Since density can be pursued in ways that don't contribute to livability, it's important to get density efforts right. Try the following:

■ Embrace a public process and build support

Develop an education and awareness campaign prior to implementation and reach out broadly to community members, elected officials and municipal leaders. Illustrate different alternatives for what high-density, mixed-use neighborhoods might look like.

■ Inspire the public with model projects

Because many Americans have strong feelings about high-density, mixed-use development, be prepared to highlight local or regional success stories.

■ Compatibility matters

Neighbors may worry that a new development will clash with the look and feel of the community, so engage residents in meetings where they can have input into the design. Ensure that any new development complements a neighborhood's existing homes and streetscape.

■ Get the design right

In many new suburban communities, developers have been permitted to build tract-style homes, each with identical two-car garages, large driveways and small yards. Sometimes the development code calls for overly wide streets as well, which undercuts the benefits of mixed-use density by allowing cars to predominate over pedestrians and bicyclists. A way to achieve moderate density is to build smaller single-family homes on small lots with rear-access garages or street parking. This can also be done by creating accessory dwelling units, such as a 500- to 800-square-foot "in-law" apartment.

■ Review zoning and development guidelines

Make sure developers receive clear guidance about building design and placement. Consider ways to achieve transitions from higher to lower density areas, such as by creating special district densities.

■ Utilize form-based code

Form-based codes offer a powerful alternative to conventional zoning since it uses the physical form rather than the separation of uses as its organizing principle. Such codes consider the relationships between buildings and the street, pedestrians and vehicles, public and private spaces and the size and types of streets and blocks.[15] The code also establishes rules for parking locations and limits, building frontages and entrance location(s), elevations, streetscapes, window transparency and block patterns (i.e., no oversized "super blocks"). Since form-based code can be customized, the code in one area might be about preserving and enhancing the character of the neighborhood while the goal elsewhere is to foster dramatic change and improvements. Often, a community's form-based code does both.[16]

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SUCCESS STORIES

Davis, California: Old North Davis

One of the most walkable places in America, the Old North Davis neighborhood evokes a classic small town feeling even though the community has an overall density of 10.7 units per acre. The neighborhood features a wide variety of housing types: Some homes take up an entire lot while others have a large yard or two small houses sharing the lot. Walking is popular, especially to the neighborhood's five-acre park, which twice a week hosts the nation's largest farmers' market. (The venue attracts 600,000 visits a year.) The city provides a bus service and uses angled parking for cars. In addition, there's enough bicycle parking to accommodate hundreds of cyclists. (See the pair of Davis photos on page 3.)

Portland, Oregon: Fairview Village

Fairview Village is a cohesive network of neighborhoods built around a community core that has shopping, civic buildings and public parks that are all scaled to people rather than cars. Village designers wanted to create a community that has the warmth and security of a small town while offering the vitality and convenience of an urban setting. Fairview has become a popular place to live and work, with a range of housing types and density, parks and open space, a library, a school, civic buildings and a small downtown.

Langley, British Columbia: New Villages

This Canadian city expects to double its population in 30 years to about 200,000. To be ready, Langley plans to create eight distinct villages, separated by large stretches of open space and agricultural land. Plans call for most neighborhoods to be developed densely enough to leave nearly 80 percent of the land green, providing residents with direct links to trails and fresh food from local farms.

WHY IT WORKS

Before and After

Communities can be transformed by integrating land use and transportation planning. Streets become human scale, new investments are made and the building density is diversified, as illustrated by this photo-vision for rural Hot Springs, Ark.

RESOURCES

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5. **Overlooked Density: Re-Thinking Transportation Options in Suburbia.** Larco, N., Schlossberg, M. Oregon Transportation Research and Education Consortium. (2014) http://www.otrec.us/project/152

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Form-Based Code

A LIVABILITY FACT SHEET

Smart zoning and land use codes are the foundation upon which great communities are built.

The use of zoning regulations began in the early 20th century in response to urban overcrowding and the intrusion of heavy industry into residential and retail areas. Communities chose to address the problem by separating incompatible uses and limiting residential density.[1] Those efforts shaped the form of the built environment in unintended and occasionally unwanted ways.

For instance, because traditional zoning rules often promote low-density development and limited "one-size-fits-all" housing choices, the policies encourage excessive land consumption and automobile dependency.[2] Such zoning can stand in the way of communities seeking to create vibrant, walkable neighborhoods that give residents the option of walking to a store, park or work. Some zoning ordinances can even interfere with a person working from home or operating a home-based business.[3]

By using the physical form rather than the separation of uses as an organizing principle, form-based code offers a powerful alternative to conventional zoning. With form-based code what matters are the relationships between buildings and the street, pedestrians and vehicles, public and private spaces and the size and types of roads and blocks.[4] Instead of dictating or limiting activities, the code focuses on such elements as parking locations and limits, building frontages and entrances, window standards, streetscaping and building elevations.

Form-based code can be customized to fit a community's vision, be it to preserve and enhance a neighborhood's character or dramatically change and improve it. Form-based codes can do both.[5]

1. Michigan Association of Planning . (January 2007) "Form-Based Codes." *Smart Growth Tactics.* Issue No. 28. http://www.mml.org/pdf/map_article_issue28.pdf
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3. EPA, "Examples of Codes That Support Smart Growth Development." Retrieved March 21, 2014, http://www.epa.gov/smartgrowth/codeexamples.htm

In the Village of Oak Park, Ill., form-based code has helped rescue and repurpose older buildings and inspire new mixed-use construction. The improvements are drawing investors and people to the heart of the community's downtown.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "Form-based code is too restrictive and ignores the market."

Both form-based codes and conventional or traditional zoning codes establish controls on development. While form-based codes emphasize standards that shape the neighborhood or community and offer a great deal of flexibility, conventional codes contain vague standards that often fail to benefit the larger public good. Form-based codes have clear and precise standards and a streamlined and predictable process. This clarity and predictability have opened development potential within many communities by bringing together planning, design, economic development, engineering and public safety professionals. By joining these stakeholders and others, and doing so early in the process, it becomes possible to get input from multiple points of view, assess costs and better understand how public and private partners can implement the vision.[6]

■ "Hybrid or rezoning is better."

It's not, if design is simply added into conventional zoning. In such a case the focus will likely remain limited to controlling an area's density and uses. However, communities can experience the best of both worlds by using a hybrid system that adopts form-based code for small areas, such as in distinct neighborhoods or corridors, and carefully integrates the use of such form-based code area into the citywide zoning platform.[7]

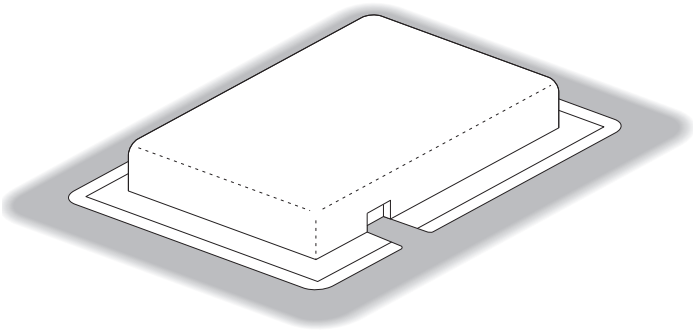
■ "Developers will resist form-based code."

Developer resistance has been a problem in many communities, especially in smaller towns where developers accustomed to building the same product year after year have had trouble adjusting to new codes. However, many developers welcome form-based code because it enables them to build a higher quality, more aesthetic product. Research shows that codes adopted as the result of a proactive public process are far more successful than those produced without engaging the public in defining the community's vision. When code was applied with little public imput, developer pushback has been the strongest.[8]

HOW IT WORKS

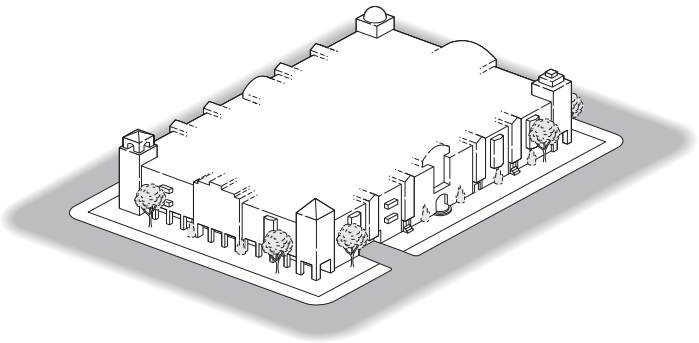
How zoning defines a one-block parcel

Density, use, FAR (floor-area-ratio), setbacks, parking requirements and maximum building height(s) specified.



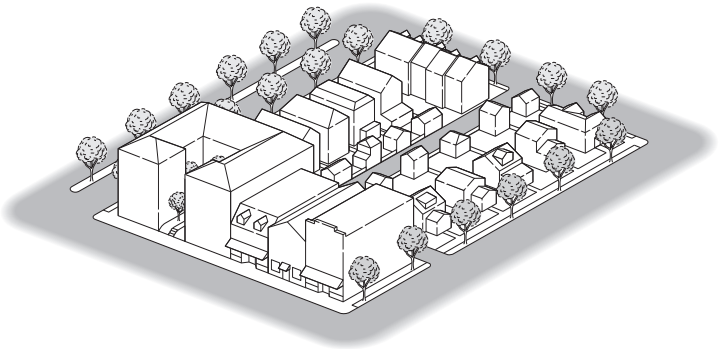
How design guidelines define a one-block parcel

Density, use, FAR (floor-area-ratio), setbacks, parking requirements, maximum building height(s), frequency of openings and surface articulation specified.



How form-based codes define a one-block parcel

Streets and building types (or mix of types), build-to lines, number of floors and percentage of built site frontage specified.



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8. *New Urban News* (April 2010) "Survey: Combine New Code with Activities and investment." http://www.formbasedcodes.org/files/Survey_Combinewithinvestment.pdf

HOW TO GET IT RIGHT

■ Embrace a public process and build support

Develop an education and awareness campaign prior to implementation, and reach out to developers, community members, elected officials and municipal staff. Government leaders may need to see public support before acting. Developers may need to see political support and funding first. To build support community advocates can share this fact sheet and meet with decision makers, news outlets, experts and others to discuss the benefits of form-based codes. To build public acceptance and understanding, agency staff should host community-wide or neighborhood visioning or design workshops and provide regular updates.

■ Provide municipal funding first

Developers may want to wait for someone else to test the first project with the new code. According to a survey of 35 communities, cities that invested their own funds found that developers followed, but those that put the responsibility solely on developers didn't do as well. A community has to show support politically and financially. Those that do typically get a good return.

■ Make the code mandatory

Mandatory codes provide more predictability to the urban form and help direct development to the code area. If a community has done the right amount of due diligence, held public brainstorming and design sessions and worked toward public buy-in of a common vision, the legal issues should be minimized and the public will already know what to expect.

■ Demonstrate existing successes

Help educate developers to get them comfortable with the new code and goals. Provide existing examples of similar, successful designs.

■ Replace the existing zoning code

The form-based code should replace the existing conventional zoning code for all or part of the community, and all development within the area should abide by the form-based code. This approach generally offers the widest range of opportunities for transforming a targeted area of a community while maintaining established character in others. It also offers the advantage of consistency in regulatory vocabulary and procedures throughout the code.
Tailor the code to the place or neighborhood
Personalize the code to its specific geography, politics and culture in order to be successful. Take the time to identify each neighborhood's character and vision. Periodically review and update the code.

■ Include regulatory plans and standards

A regulating plan is a master plan or zoning map in which different building forms, public streets and spaces are defined based on clear community intentions about the physical character of a designated area, such as a neighborhood or community. Building form standards define the configuration, design features and functions of buildings that frame the public realm.

A BEFORE AND AFTER PHOTO VISION OF CHINCOTEAGUE ISLAND, VIRGINIA

BEFORE: Buildings set back from the street, poor walking and bicycling safety, unused parking, minimal appeal.
AFTER: Buildings close to the street, good walking and bicycling safety, useful parking, strong visual appeal.

SUCCESS STORIES

Redwood City, California: Downtown Precise Plan

Since a new form-based code was adopted in January 2011, there's been more downtown housing development than in the previous five decades combined. All of the development in the two years following the code's enactment was privately constructed. Between 1980 and 2010 most development required assistance from the city's redevelopment agency. Under the updated Downtown Precise Plan, 421 residential units were under construction by August 2013, 280 more units were approved and 471 more were under review — for a total of 1,172 downtown units. In addition, 300,000 square feet of office space was under way. All projects received planning approvals in six months or less without opposition. Downtown Redwood City is now more active than it has been in decades, retail vacancies have fallen and an eclectic dining and pub scene has materialized.

As part of Redwood City, California's "Downtown Precise Plan," El Camino Boulevard is being transformed from commercial to mixed-use zoning.

Cincinnati, Ohio: Citywide Code

In 2010 Cincinnati's vice mayor, Roxanne Qualls, introduced a motion to adopt zoning in support of mixed-use, pedestrian-friendly development around transit stations. A report released after a five-day urban design workshop (which was attended by more than 700 public participants) explained why Cincinnati needed the change: "The city has lost 40 percent of its population since 1950, leaving suburban densities in the city's formerly urban neighborhoods. Many residential buildings and lots sit vacant." The effort grew into citywide form-based code, adopted in May 2013 and achieved with the help of a $2.4 million federal grant. The plan calls for every Cincinnati neighborhood to be mapped and have regulating plans approved. The code has been applied to business districts and key vacant parcels. The city hopes the new form-based code will spur redevelopment of neighborhoods that have been in decline or stagnating for a long time.

Nashville, Tennessee: Community Character

Nashville replaced its conventional zoning with a "Community Character" approach to policy that is based on the look and feel of neighborhoods, centers, corridors and open spaces. The change has resulted in a 75 percent increase in taxable value in the districts where the approach is used, compared to a 28 percent increase in the county over the same time period.

RESOURCES

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Parking

A LIVABILITY FACT SHEET

Parking in the United States has a high cost. Cars sit unused 95 percent of the time, and motorists park for free in 99 percent of the places they go.[1] In three out of 10 car rides to nearby destinations, studies show that drivers spend three to eight minutes looking for parking.

Since the average American household has 1.9 automobiles,[2] many municipalities require two covered parking spaces for each single- and two-family dwelling. Most cities also require off-street parking spaces — up to four parking spaces for every 1,000 square feet of office space.[3] In low-density settings with no transit options, parking can take up more than 50 percent of the land used in a development.[4]

"The cost of all parking spaces in the U.S. exceeds the value of all cars and may even exceed the value of all roads," says UCLA urban planning researcher Donald Shoup.[5] The opportunity cost can be high as well, since each parking space can reduce new housing units, businesses and social, recreational or other uses by 25 percent.[6]

About 96 percent of the financial cost of parking is bundled into rents and housing costs, higher prices in stores, and myriad other charges. Only about 4 percent of the cost is covered by pay-as-you-go parking, such as metered parking. In fact, if drivers paid for parking as they used it, the total expense of operating a vehicle would roughly double.[7]

Off-street parking is the most expensive type of parking. Each space typically uses 300 to 350 square feet, costs between $3,000 and $27,000 to build and about $500 a year to maintain and manage.[8]

On-street parking is more efficient and can be a strong revenue generator. If a single on-street parking space turns over frequently — about 12 to 15 uses a day — it brings in as much as $300,000 in revenues to nearby businesses.[9]

1. Shoup, D. The University of California Transportation Center, Berkeley, Calif. (1997) "The High Cost of Free Parking." *Journal of Planning Education and Research*, Vol. 17, pp 3-20, UCTC No. 351. http://www.uctc.net/papers/351.pdf.
2. U.S. Department of Transportation. (1990) Nationwide Personal Transportation Survey
3. Shoup, D. The University of California Transportation Center, Berkeley, Calif. (1997) "The High Cost of Free Parking."*Journal of Planning Education and Research*, Vol. 17, pp 3-20, UCTC No. 351. http://www.uctc.net/papers/351.pdf
4. U.S. Environmental Protection Agency. (January 2006) Parking Spaces / Community Places Finding the Balance through Smart Growth Solutions. EPA 231-K-06-001. http://www.epa.gov/smartgrowth/pdf/EPAParkingSpaces06.pdf

On-street parking, such as the kind seen on this Seattle block, is the most beneficial type, and head-out angled parking is the safest and easiest method — drivers have stopped traffic before backing in and can see oncoming traffic when pulling out. In addition, loading is more convenient and separated from moving traffic.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "There isn't enough parking in busy areas."

In Raleigh, N.C., there are about 40,000 parking spots downtown, of which approximately 9,000 are in parking decks managed by the city. The use of these decks is below 60 percent on most days and the city carries more than $100 million in debt for them.[10] A study of office buildings in 10 California cities found that the peak parking demand averaged only 56 percent of capacity. In another study, peak-parking demand at nine suburban office parks near Philadelphia and San Francisco averaged only 47 percent of capacity and no office park had a peak parking demand greater than 60 percent of capacity.[11]

■ "We need parking minimums."

Most cities in the U.S. include parking minimums in their zoning codes, but minimum requirements are causing more off-street parking to be built than needed. This causes excessive development costs. Where excess parking is not used, empty spaces can be a blight within a shopping area or a neighborhood. Eliminating or reducing off-street parking requirements allows developers more flexibility in the amount of parking they provide and how they provide it. This change removes a barrier to new investments, especially in downtowns and transit centers, and potentially makes the final product more affordable.[12]

■ "Free parking brings customers to our store."

Given a choice, motorists usually prefer free parking, but consumers ultimately pay for parking through higher taxes and retail prices and reduced wages and benefits. The choice is actually between paying directly or indirectly.[13] In Portland, Ore., property values and customer volume in parking-restricted areas near transit stations are higher than in other areas.

Left: **Spaces can be more available if regulated and priced to prioritize short stays instead of all-day parking.**
Right: **In Seattle, Wash., head-out angled parking provides motorists with a clear view before pulling out.**

5. Shoup, D. 1999, abstracted from Journal) *Instead of Free Parking*. http://shoup.bol.ucla.edu/InsteadOfFreeParking.pdf
6. Transform. (2002) *Housing Shortage/ParkingSurplus*. http://www.transformca.org/files/reports/housing-shortage-parking-surplus.pdf
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HOW TO GET IT RIGHT

The success of any tool lies in getting it right, and this is true of parking. Try the following:

■ Unbundled parking

When selling a townhouse, condo or other living unit, a developer can be given permission to rent or sell parking spaces separately. This arrangement often reduces the number of cars a homeowner chooses to own and store. For a parking deck, this can amount to more than $27,000 per space.[14]

■ Parking in-lieu fees

Consider allowing developers to pay a fee in lieu of providing parking. For example, Palo Alto, Calif., allows developers to pay the city $17,848 for each parking space that's not provided. The city then uses the fee revenue to provide publicly owned parking spaces nearby.

■ Shared parking

Public parking spaces can allow shared use among different private and/or public sites that have peak parking demands at different times. Shared public parking is more efficient than single-use private parking because fewer spaces are needed to meet the total peak parking demand in the vicinity. Large numbers of peak parking spaces are no longer needed for every site.

■ Appropriate variances

A community should work with developers to encourage on-street parking in lieu of off-street parking. For example, parking variances can be granted in exchange for developer- or business-installed bicycle parking, which is a beneficial trade-off since 12 bicycles can fit into one vehicle parking space.

■ Incentives to reduce demand

Policies should allow the developer to reduce the demand for parking rather than increase its supply. When good transit services are available, a program allowing employees to trade in their parking passes for cash is a means to reduce demand. Another tool is "location-efficient housing." Residents and employees in such areas tend to drive less, rely more on alternative forms of transportation and enjoy better transportation options than those who live or work in less accessible areas.[15] This can be calculated to reduce parking demand. Other practices to reduce demand for parking include using existing spaces more efficiently, targeting different types of users, sharing parking between uses with different peak demands, and shifting the cost of parking from the general public onto the users.[16]

■ Public/private partnerships

Investments made jointly by the public and private sectors can be used to help pay for parking. These partnerships can reduce the public sector's direct debt burden while also providing needed infrastructure. ParkIndy, a for-profit corporation, manages parking in Indianapolis, saving the city $3 million per year and eliminating its financial risk. Indianapolis hopes to net around $600 million over the life of the contract.

■ The ideal parking garage

Mixed-use garages that provide ground-level retail, then two or three stories of parking, and condos or apartments on the top floor, can provide an immediate supply, then permit reductions over time. As the need for parking declines some or many of the parking spaces can be converted into offices or living units.

■ Reduced impact of surface parking lots

Reduce parking stalls to 8 feet wide for low-turnover spaces and dedicate a certain percentage to compact cars. With careful design it's possible to get in two rows of 90-degree parking plus service lanes within a 54-foot-wide parking area. Consider minimum landscaping requirements of 15 percent, a lot of tree canopy, rain gardens, bioswales, pavers or other pervious materials when practicable, and treat all water on site. Green space should be edges separating the lot from adjacent streets or landscaped sections that break up the lot.

■ Better building design

To improve the streetscape consider dedicating the first floor of public parking structures to retail use. Developers can undertake infill projects without assembling large sites to accommodate on-site parking, and architects have greater freedom to design better buildings in a more pedestrian-friendly environment.

16. Chicago Metropolitan Agency for Planning. (April 2012) Parking Strategies to Support Livable Communities. http://1.usa.gov/1i9o4XY
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SUCCESS STORIES

Oakland, California: Fruitvale Transit Village

A large mixed-use mixed-income development grew out of community resistance to the Bay Area Rapid Transit system's plan to build a parking garage between the Fruitvale BART station and the Latino neighborhood's commercial center. The local Unity Council worried the structure would hasten the decline of the already distressed neighborhood. BART withdrew the plan and agreed to work with the neighborhood on an alternative, so the parking garage was built nearby on Union Pacific Railroad property. The Fruitvale Transit Village now links the neighborhood and BART station with a pedestrian corridor and plazas lined with shops, offices, apartments and community services. The village includes a clinic, child development center, senior center and library, all within walking distance.

Calgary, Alberta, Canada: Downtown

The city of Calgary has determined that 24 parking spaces per 100 jobs is the right ratio. Calgary charges market prices for its downtown parking spots, which range from a pricey $700 to $900 per month. Rates are adjusted each year to assure balanced supply and use. This pricing practice has helped fuel a resurgence of more compact living, growing the economy in and around the downtown and resulting in miles of new trails, world class pedestrian and bicycle bridges, and rebuilt transit platforms that move trains more efficiently.

A Tale of Three Cities: Less is More

Since 1980, Berkeley, Calif., as well as the Massachusetts town of Arlington and city of Cambridge, began limiting their surface parking spaces. Research shows that the number of people and jobs has climbed, as have incomes. Less parking has enabled the urban fabric to stitch back together with more room for shops, restaurants, jobs and other things that make cities great. The extra parking isn't needed since people are driving less, living close to the urban core where nearly 30 percent walk or bike to work.[17]

WHY IT MATTERS

BIG MONEY FOR FREE PARKING

$105 billion to $310 billion*

NASA budget: $18.56 billion

National defense budget: $705.6 billion

Federal education spending: $65.5 billion

PARKING IS WORTH MORE THAN CARS

Estimated annual average value of parking for one vehicle: $12,000

Average depreciated construction value of roads, per vehicle: $6,542

Approximate average value of one U.S. vehicle: $5,507

* The indirect costs to Americans based on assumptions about the number of parking spots nationwide and those spots' building and operating costs in 2011 dollars. Those figures equaled to 1.2 to 3.7 percent of total U.S.. economic output. *Source: myparkingsign.com/blog/free-parking, citing "Changing the Future" by Donald Shoup ,* The High Cost of Free Parking *(2nd Ed) pp. 589-605, American Planning Association.*

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3. **Parking Code Guidance: Case Studies and Model Provisions.** MTC. (June 2012) http://bit.ly/1kGsaLY
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5. **Walkable 101: Head-Out Angled Parking**. WALC Institute. Video. http://www.walklive.org/project/videos/
6. **Housing Shortage, Parking Surplus.** Report. (July 2002) Transform.
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8. **Cruising for Parking**. *Transport Policy*, Vol. 13, No. 3, 2006. Donald Shoup. http://shoup.bol.ucla.edu/Cruising.pdf

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Sidewalks

A LIVABILITY FACT SHEET

After driving, walking is the most popular means of travel in the United States, with 10 percent of all trips occurring by foot. Eight in 10 Americans prefer being in a community that offers sidewalks and good places to walk. Six in 10 prefer a neighborhood featuring a mix of houses, shops and services within an easy walk versus a neighborhood that requires a car for every errand.[1]

Studies have found that people who live in neighborhoods with sidewalks are 47 percent more likely to be active at least 39 minutes a day.[2]

Sidewalks play a vital role in community life. As conduits for pedestrian movement and access, they enhance connectivity and promote walking. As public spaces, sidewalks are the front steps to the community, activating streets socially and economically. Safe, accessible, well-maintained sidewalks are a fundamental community investment that enhances public health and maximizes social capital.[3]

Sidewalks increase foot traffic in neighborhood retail centers, delivering the customers that local shops and restaurants need in order to thrive. Retail properties with a Walk Score ranking of 80 out of 100 were valued 54 percent higher than properties with a Walk Score [4] of 20 and had an increase in net operating income of 42 percent for more walkable properties.[5]

Interest in sidewalks is so keen that they've become a factor in home prices. For example, in a scenario where two houses are nearly identical, the one with a five-foot-wide sidewalk and two street trees not only sells for $4,000 to $34,000 more but it also sells in less time.

A well-constructed walkway for a typical 50-foot-wide residential property might cost a builder $2,000, but it can return 15 times that investment in resale value. A 2009 report by CEOs for Cities found that just a one-point increase in a community's Walk Score would increase home values by $700 to $3,000.[6]

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2. Sallis J., et al. "Neighborhood Environments and Physical Activity among Adults in 11 countries." *American Journal of Preventive Medicine*, Vol. 36, No.2
3. National Association of City Transportation Officials (NACTO). (October 2012) *Urban Street Design Guide* pp 24-25. http://www.nyc.gov/html/dot/downloads/pdf/2012-nacto-urban-street-design-guide.pdf
4. Walk Score® is an online logarithmic ranking system that determines the basic walkability of a residential or commercial property. Walk Score uses neighborhood factors such as distance to shops and schools to create a number between 0 and 100 that measures the walkability of any address http://www.walkscore.com

Good downtown sidewalks have enough room for people to walk, stop and talk, or even sit for a bit. This wide sidewalk in State College, Pa., is made of visually appealing paver stones. Care must be taken when installing paver and similar surfaces so wheelchairs and other wheeled devices can roll smoothly over them.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

■ "No one will use the sidewalk."

This might have been true in the past, but research published in 2012 by the Centers for Disease Control and Prevention[7] and in 2013 by the National Center for Safe Routes to School[8] shows that a growing number of people are walking, and that many are children and adults age 65 and older. People just need safe, convenient and pleasant places near their homes, schools and workplaces to make walking routine, says the CDC study.

■ "Americans prefer to drive."

Perhaps, or maybe they're driving so much because there are no sidewalks. Federal data on vehicle miles traveled and a recent national study show a decline in driving and car ownership during the 2000s in an overwhelming majority of metro areas. At the same time, the number of people commuting by bicycle and transit increased.[9] A 2002 survey by the Surface Transportation Policy Partnership found that 55 percent of Americans would prefer to walk more and drive less.[10]

■ "Trees will be destroyed."

Not necessarily. Sidewalks can be curved to avoid trees. In fact, protecting a tree is one of the few reasons for a sidewalk to deviate from a direct route.[11]

■ "The sidewalk will take land away from my front lawn."

Many homeowners don't realize how far from the curb their private property line actually extends. There's often enough of a public right-of-way easement in place to create a sidewalk without infringing on a property owner's land.[11]

■ "A sidewalk will bring people too close to my house."

There's little difference between what passersby can see from a sidewalk versus what they can already see from their cars or by walking along the edge of the road. Any nearness added by a sidewalk may be as little as a few feet.[11]

■ "Sidewalks increase crime."

Actually, increased pedestrian activity puts more eyes on the street and creates safety in numbers, which deters and reduces criminal activity.[12]

■ "Tax dollars are better spent on other needs."

Since sidewalks increase property values and tax revenues, they serve as an economic engine. Plus, sidewalk maintenance costs are real estate tax-deductible (IRS Publication 530). Sidewalks are also safety investments (by bringing more eyes and ears to the street) and an integral part of a balanced transportation budget. [11]

■ "I'll be liable if someone gets hurt on a sidewalk near my property."

It depends. Liability is determined by state and local law, but either government or private owner negligence concerning an "unreasonably safe" or "defective condition" (such as a wide crack or raised section) has to be proven in court in order to win a lawsuit.[13]

■ "Sidewalks ruin a rural neighborhood's character."

It's only in recent decades that sidewalks have been phased out of developments. There are many ways to build a sidewalk or path to match the design and feel of a community.

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HOW TO GET IT RIGHT

Smart sidewalk widths: five to seven feet in residential areas, eight to 12 feet in downtown settings.

Well-built sidewalks can last 25 years or more with little more than minimal care.

The success of any tool lies in getting it right, and that's true of sidewalk design and construction. Try the following:

■ Engage neighbors and the community

Expect some opposition and use this fact sheet to help make the case for the sidewalks. Mobilize like-minded people and work together as a neighborhood or community. Meet with your neighbors to raise awareness and address any resistance.

■ Make the sidewalk wide enough

Sidewalks are critical in downtown neighborhoods and busy retail areas, both of which have lots of people, destinations and potential conflicts with vehicles. In these areas it's important to install sidewalks that are wide enough to handle foot traffic and community features such as cafe seating, benches and other spots for socializing.

■ Use a site-appropriate design

Design the sidewalk to fit the setting. Even rural communities can benefit from a tastefully designed walkway. Make sure sidewalks are well-maintained and appealing, with safe and convenient street crossings and enough width to accommodate two or three people walking side by side. The ideal setback for a sidewalk is four to 10 feet from the roadway. Planter strips, trees and on-street parking can extend the buffer, increasing comfort and slowing traffic.

■ Prioritize high-use areas and connectivity

At the outset of a sidewalk construction program, prioritize where to build first by focusing on a quarter-mile circle around schools, parks, transit stops and key commercial destinations. Everything within that circle should be a priority for sidewalk construction. Be sure to map sidewalks so they're connected between the primary areas where people work, shop and play.

■ Consider driveways

In many neighborhoods and retail areas, driveways are full of both moving and parked cars. Since driveways interrupt a sidewalk's flow and safety, they should be kept to a minimum in commercial areas. Carefully plan the best way to treat sidewalks that will cross driveways, especially in high-use areas. Alleys are a good tool for separating people from traffic, especially in retail areas.

■ Build and maintain with municipal funds

Many communities require property owners to pay for and clear sidewalks (snow, ice, etc.). Since sidewalks are a public benefit, a better policy would be to install and maintain sidewalks with public funds.

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SUCCESS STORIES

■ Decatur, Georgia: Citywide Sidewalk Program

Decatur has been dubbed the most walkable city in Georgia, with more than 60 miles of sidewalks in its 4.2 square miles. The ongoing, citywide sidewalk improvement program began in 2004 with a Health Impact Assessment and funding from annual appropriations by the Decatur City Commission. The program's goal is to have a sidewalk on at least one side of every street in town. More than four miles of new and replacement sidewalks had been built by Spring 2014.

■ Austin, Texas: Sidewalk Prioritization

The City of Austin has built almost 100 miles of new sidewalks since 2005 to encourage walking as a viable mode of transportation and to improve safety, accessibility and pedestrian mobility. Austin completed a detailed sidewalk inventory, documented current conditions, obtained public input on sidewalk needs and issues, and established city sidewalk priorities that were organized into a downloadable Sidewalk Prioritization Map. The city prioritizes compliance with the Americans with Disabilities Act, sidewalks that allow children to walk safely to school, a connected network of sidewalks, trails and bikeway, and sidewalks that serve bus stops. More than 300 bus stop sidewalks have been completed since 2011.

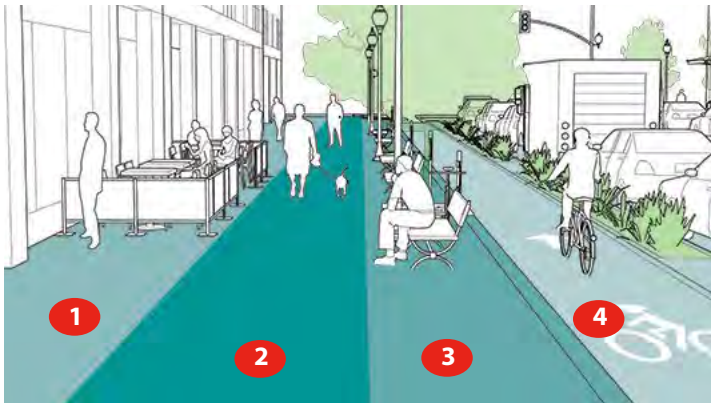
■ Calloway County, Kentucky: School Sidewalks

Walking or bicycling to school was prohibited in and around the small city of Murray because there were no sidewalks and it wasn't a safe way to travel. The local government offered to build sidewalks if the school system would change the policy. The effort resulted in 15,960 feet of sidewalks, including from the county middle school to a low-income housing area. Hundreds of students now regularly walk to school. "Every time I look down the street, there are people on the sidewalks, people pulling wagons, people walking their dogs," said a school district administrator.

HOW IT WORKS

Design guidelines recommend a minimum sidewalk cross section of five feet, exclusive of other amenities and large enough for at least two people to walk side by side. Here's a guide to the potential spaces alongside a property.

1. **Frontage Zone:** an extension of the building
2. **Pedestrian Through Zone:** safe and adequate place for walking, width of five to seven feet in residential areas, eight to 12 feet in downtown or commercial settings
3. **Street Furniture/Curb Zone:** plants, trees, benches, lighting and bike parking to provide a protective barrier from motorized traffic
4. **Enhancement/Buffer Zone:** curb extensions, parklets, parking, bike riding, bike e-racks and bike stations



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4. **Walkability, Real Estate and Public Health Data**, Walk Score Data Services, http://www.walkscore.com/professional/research.php
5. **Sidewalks and Streets Survey.** http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_013.htm
6. **Business Performance in Walkable Shopping Areas.** Active Living Research. (November 2009) http://activelivingresearch.org/files/BusinessPerformanceWalkableShoppingAreas_Nov2013.pdf
7. **Walk Score blog** at http://blog.walkscore.com/

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Traffic Calming

A LIVABILITY FACT SHEET

Since the advent of the automobile, most streets in the U.S. have been designed primarily for cars — fast-moving cars. Streets and parking now take up 25 to 50 percent of all public space in cities.[1]

Unfortunately, roadways designed to move traffic at high speeds undermine the historic functions of streets to help people interact and get around, regardless of their mode of transit. Smarter transportation design moves traffic while keeping communities safe and connected.[2]

For instance, when vehicles traveling at 20 mph collide with pedestrians, fewer than 10 percent of those struck are killed, most injuries are minor and 30 percent suffer no injuries at all. However, when a vehicle is moving at 30 mph, 45 percent of pedestrians hit are killed and many are seriously injured; at 40 mph, more than 80 percent of the pedestrians are killed and all are severely injured.[3]

According to the 2014 "Dangerous by Design" report, our roads are especially hazardous for children, low-income people and older adults. Even though older adults are 13 percent of the U.S. population, they were 20 percent of pedestrian fatalities in 2011.[4]

Traffic calming is a system of design and management strategies that include narrowed roads, modern roundabouts, chicanes (intentionally added turns in the road), median islands, speed humps, diverters, speed tables and other engineering tools or interventions.[5] These measures are used with the intent of slowing motor-vehicle traffic, often without reducing overall traffic volumes. The efforts increase safety and create a balanced urban environment for all users, including pedestrians and bicyclists.[6]

Another benefit of traffic calming is that it can give a street a transformative sense of place, thus boosting social interactions, housing and retail businesses.[7] The changes help reduce pollution, noise and even crime,[8,9] as it has in communities including Dayton, Ohio, where speed reductions and the closing of streets and alleys to motor vehicles lowered violent crime by 50 percent.[10]

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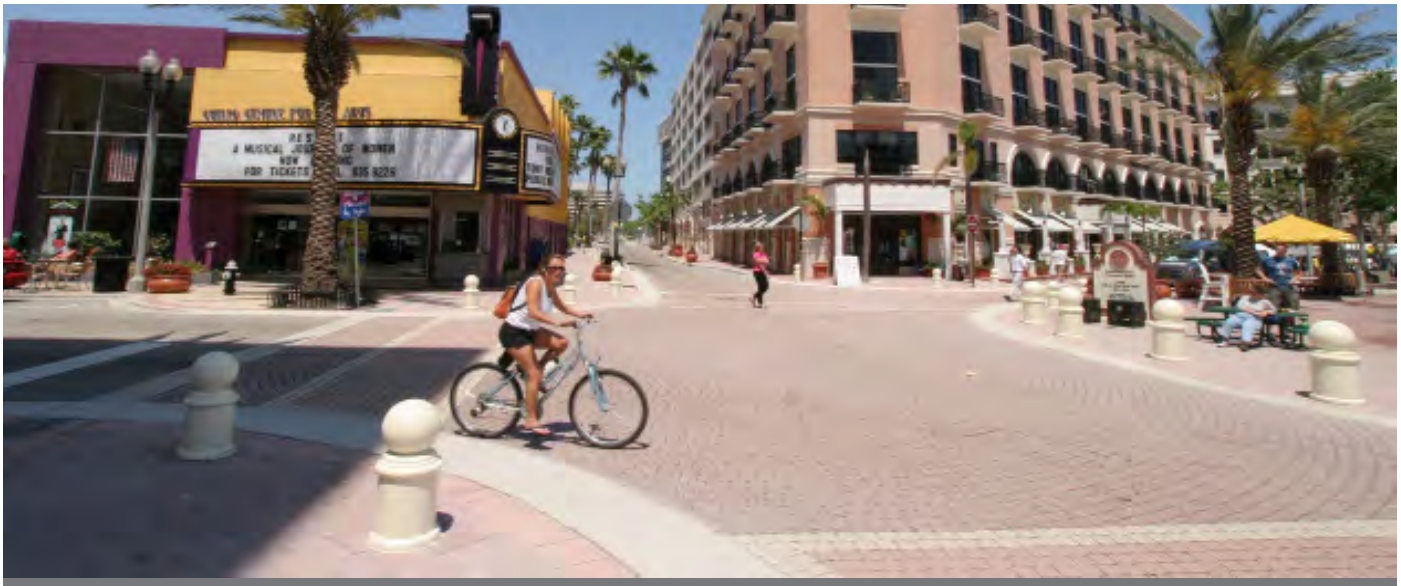

Soon after West Palm Beach , Fla., removed 17 travel lanes in its downtown, new street life and investment followed, revitalizing this town center. Crime rates also dropped due to traffic calming.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

"Traffic calming will divert cars onto my street."

Drivers tend to use primary streets and roads because they provide the most direct and efficient route to their destinations. Traffic-calmed streets, when designed with certain measures that slow traffic without causing much diversion, can have little to no effect on overall traffic volume, except perhaps during the construction period. The Institute of Transportation Engineers recommends using traffic circles and long speed humps instead of street closures and standard speed humps as a way to avoid diversion.[11]

"Traffic calming creates traffic jams."

On roads with less than 20,000 vehicles per day, traffic calming techniques such as "road diets"[12] have minimal or even positive effects on vehicle capacity. One reason: Left-turning vehicles are moved into a center lane. When necessary, bike lanes and center turn lanes can be used for police enforcement and stranded vehicles in order to avoid disrupting the normal traffic flow.[13]

"Traffic calming is bad for transit."

Transit conflicts can be avoided with good planning, such as incorporating a center lane so motorists can swerve around stopped buses or by adding side pull-out bays for buses.

"Traffic calming slows down emergency responders."

By not using short speed humps and stop signs, a traffic-calmed street, even with offset speed tables, can accommodate emergency vehicles without reducing emergency response times.[14] Drivers can use bicycle lanes to move out of the way, and a center turn lane can be used by responders to efficiently pass other vehicles.

"People don't like traffic calming measures."

Neighborhood traffic calming projects have gained broad acceptance and support in cities that use an effective and meaningful public engagement process. The redesign of Brooklyn's Prospect Park West reduced vehicle speeds, increased bicycle use and improved the street's overall capacity, all while maintaining motorized vehicle travel times. The project provoked a small group of residents in opposition, but the city, the community board and 70 percent of residents supported the project[15] and even succeeded in getting the speed limit reduced even further, to 25 mph.[16]

"Traffic calming measures are being reversed."

Traffic calming is proving to be effective, safe and popular. With the exception of short speed humps, of the more than 20,000 road segments calmed nationwide few have been converted back to their original configuration.

"The city or community will be held liable for damages."

Communities seeking traffic calming measures often hear that legal liability is a concern. Nationwide, thousands of traffic calming measures have been installed since the 1970s, with only six liability verdicts. Compared to the steady stream of liability cases that cities face from simple road maintenance and construction projects, traffic calming has a minimal liability risk.[17] On the major plus side, slower traffic speeds reduce the chance of crashes, and the damage, injuries and fatalies that can result.[18]

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HOW TO GET IT RIGHT

Atlanta's Cascade Avenue, with up to 17,900 vehicles per day, is a challenge to walk, bicycle or shop.

Cascade Avenue after traffic calming could inspire redevelopment that tranforms the neighborhood.

The success of any tool requires using it right, and this is certainly true of traffic calming. (Perhaps "street repurposing" is a more accurate term?) Try the following:

■ Embrace a public process and build support

Develop an education and awareness campaign prior to implementation and reach out to community members, elected officials and municipal leaders. Elected leaders and agency staff may need to see public support first, to inspire their approval and help navigate the implementation. Community advocates can print this fact sheet, talk to neighbors, build community support and then meet with decision makers, news outlets, experts and others to discuss the benefits of traffic calming. Agency staff can engage the public in a meaningful process, such as by hosting charrettes or interactive design workshops to build public acceptance and understanding.

■ Start with a pilot project

Consider doing a pilot project first in an area with light traffic to give drivers a chance to get comfortable with the concept and to allow municipal staff to document what works and what doesn't. Temporary and portable measures, such as paint, signage and parking changes, can allow for low cost traffic calming that is also easily removed or converted into permanent structures once the project is shown to be successful.

■ Incorporate traffic calming into larger efforts

Traffic calming is best done in conjunction with another project, such as development, revitalization, utility or maintenance work; a downtown, corridor or transit plan or a new street design. That way the traffic-calming element can simply be incorporated into the larger project's processes.

■ Traffic calming should benefit transit

Transit can help provide the convenient and safe connections that improve public spaces and enhance walking and bicycling trips, but slowing down traffic could interfere with transit functions. Because of that it's necessary to design and coordinate traffic-calming measures to ensure efficient transit movements.

■ Embrace proactive design and use target speeds, not operating speeds

A proactive approach uses design elements to affect behavior and lower speeds. This may be the single most consequential intervention in reducing pedestrian injury and fatality.[19]

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SUCCESS STORIES

Hendersonville, North Carolina: Main Street

Main Street is a former state highway that was narrowed to two traffic lanes with widened sidewalks to make downtown more pedestrian-friendly, especially for the one out of four town residents who are retired. Alternating blocks of diagonal and parallel parking were added to create a serpentine traffic flow that tames traffic even more. After the highway was rerouted to adjacent streets and the Main Street improvements were completed, Hendersonville's retail vacancies dropped from 14 to one.

San Francisco, California: Octavia Boulevard

After the 1989 Loma Prieta earthquake rendered the freeway through the Hayes Valley neighborhood unsafe for driving, residents and advocates called for the road's removal. The city built Octavia Boulevard in its place during the 1992 recession with a median, four through lanes, boulevard-style parking lanes, tree-lined walkways, side lanes for local traffic and parking and aesthetic details including special light fixtures. A new park was developed, housing increased, home values went up, employment rose 23 percent, transit trips increased 75 percent, gridlock never materialized and new restaurants and retail shops opened for business.

West Palm Beach, Florida: Downtown

Traffic calming was initially used as a response to resident complaints about speeding and cut-through motor vehicle traffic. The city found that driver behavior improved, which led to an increase of pedestrians, cyclists and skaters, which led to a substantial crime reduction. Residents and businesses invested more than $300 million in renovations and improvements, increasing property values and business receipts, neighborhood pride and tourism.

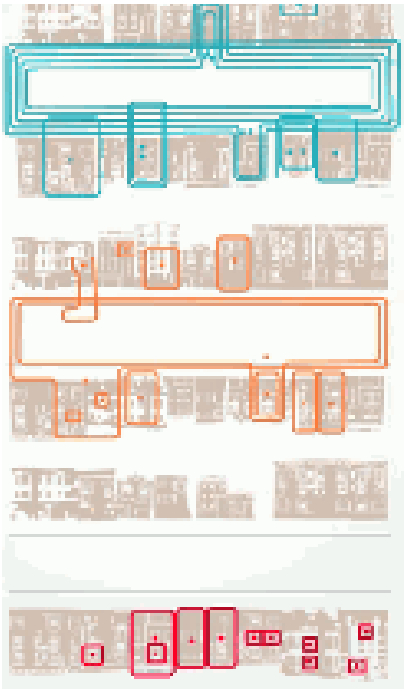
HOW IT WORKS

In 1981, researcher Donald Appleyard studied traffic on three San Francisco streets and discovered that as traffic increases, the area people consider to be their "territory" shrinks. The image below depicts the relationship between traffic volumes and how connected residents felt to their neighbors.

LIGHT TRAFFIC
2,000 vehicles per day
3 friends per person
6.3 acquaintances

MEDIUM TRAFFIC
8,000 vehicles per day
1.3 friends per person
4.1 acquaintances

HEAVY TRAFFIC
16,000 vehicles per day
0.9 friends per person
3.1 acquaintances



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Revitalization Without Displacement

A LIVABILITY FACT SHEET

As communities throughout the United States are redeveloped to become more walkable and livable, the efforts risk displacing an area's current, often longtime residents and businesses.

Displacement is of particular concern in places that have suffered years of disinvestment. Mixed-use revitalization — and its potential to restore health and prosperity to a community — also carries with it the potential to increase property values and, therefore, real estate prices. While many in the community will profit from the improvements and rising values, others may not.

The Centers for Disease Control and Prevention explains that "displacement happens when longtime or original neighborhood residents move from a gentrified area because of higher rents, mortgages and property taxes." The risks to community health associated with this type of displacement are so significant that the CDC offers strategies for mitigating the potential impact of gentrification, which "is often defined as the transformation of neighborhoods from low value to high value."[1]

It behooves all redeveloping communities to ensure that revitalization increases community health and stability by providing such features as affordable housing, robust transit services and access to transit, as well as a range of needed services and shops within walking and bicycling distance. It's important that these improvements come without displacement,[2] especially of lower-income and older residents and families.

The AARP Public Policy Institute underscores the mobility impact to older residents who are displaced into areas that are not as livable or walkable: "In areas far from transit, areas with few community features and services nearby and areas with poor transit service, losing mobility can mean losing independence."[3]

1. Centers for Disease Control and Prevention. "Health Effects of Gentrification." Retrieved February 2014, http://www.cdc.gov/healthyplaces/healthtopics/gentrification.htm
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In Macon, Ga., a revitalization effort has been underway for several years. Community leaders are seeking to reduce the risk of displacement by developing mixed-income housing, promoting neighborhood stabilization policies, restoring an historic park, building sidewalks and improving transportation connections.

AARP Real Possibilities

Walkable and Livable Communities Institute

MYTH-BUSTING!

- **"Mixed-use revitalization displaces longtime, lower-income or older residents."**

Displacement due to revitalization (one potential impact of gentrification) is a concern. However, some studies suggest that positive socioeconomic and racial diversity is an enduring feature of gentrifying neighborhoods.[4] Long-term residents can benefit when their housing options are preserved and the community improves.[5] Ensuring a mix of housing options helps make that happen. It's recommended that longtime residents be supported in their efforts to stay in the neighborhood and in their homes and that the wealth created by gentrification also be used for the benefit of lower-income residents.[6] In some places, revitalization may actually make the community more supportive of all residents. Since the mix of housing options provided in livable neighborhoods is supportive of people with differing housing needs (be the needs specific to a home's size, cost, amenities or something else), more residents are able to remain in a neighborhood even if their income, health or housing requirements change.[7]

- **"Housing and jobs prevent displacement, not walkability."**

Housing and jobs are indeed critical factors. But very low income American families spend 55 percent of their household budget on transportation costs, and the average household spends more than $8,000 a year on automobile costs.[8] Revitalized places made walkable and accessible to transit can reduce these expenses, which makes the community more accessible to and supportive of all people. [9]

- **"Rent controls are the single best solution."**

Studies indicate that over time, rent controls increase disparities and don't provide a long-term solution to affordable housing.[10] According to the AARP Policy Book, "although rent control does not effectively solve the affordable housing problem in many parts of the country, it may be desirable for states and localities to retain existing rent control ordinances for a limited time in areas with severe housing shortages or where development pressures result in the significant loss of affordable units."

4. Testimony of Lance Freeman, Associate Professor at the Columbia University Graduate School of Architecture, Planning and Preservation, to the National Commission on Fair Housing and Equal Opportunity. (2008) http://www.prrac.org/projects/fair_housing_commission/atlanta/freeman.pdf
5. Daniel Hartley. "Gentrification and Financial Health," Federal Reserve Bank of Cleveland. Retrieved March 2014, http://www.clevelandfed.org/research/trends/2013/1113/01regeco.cfm
6. Testimony of Lance Freeman, Associate Professor at the Columbia University Graduate School of Architecture, Planning and Preservation, to the National Commission on Fair Housing and Equal Opportunity. (2008) http://www.prrac.org/projects/fair_housing_commission/atlanta/freeman.pdf
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9. AARP. *The Policy Book: AARP Public Policies 2013-2014*. http://policybook.aarp.org/

Affordable housing can be integrated into compact, mixed-use development, such as in the 50-unit Tower Apartments in suburban Rohnert Park, Calif. Built in 1993, this urban design development has raised the community's opinion of affordable housing. The style reflects the older architecture in the area.

HOW TO GET IT RIGHT

Mixed-use revitalization without displacement is best achieved when a municipality plans for and financially supports affordable housing for all income levels in the community. The following strategies come from guidance documents produced by the Centers for Disease Control and Prevention, PolicyLink and the AARP Public Policy Institute.

■ Preserve, promote and support housing that is affordable for people of all income levels

Subsidized housing that currently exists, particularly in areas near transit, should be preserved.[11] In addition, communities can develop housing, increase other funding for affordable housing and establish warning systems for properties with expiring federal subsidies so resources can be allocated to protect the housing. States can administer housing trust funds and development banks for low-income housing services (such as repair, rehabilitation, rental assistance and the construction of affordable housing).[12] These funds should promote housing options in livable communities, including locations near transit options. In addition, new or renovated housing should include universal design features so residences can be broadly accessible, including to older adults and individuals with disabilities.

■ Develop mixed-income communities and adopt inclusionary zoning

Mixed-income neighborhoods or developments can be mixed-use and include single-family and multi-family units.[13] Such development is often supported by inclusionary zoning. According to PolicyLink, "most inclusionary zoning programs require external comparability between affordable and market-rate units so that lower-income families can purchase homes indistinguishable from the rest of the development. This has helped eliminate the harmful stigma that is so often attached to affordable housing."

Mandatory inclusionary zoning requires developers to build affordable units, usually in exchange for increased development rights or subsidies. Voluntary inclusionary zoning may provide an incentive to developers who choose to opt in. However, PolicyLink does warn: "While voluntary programs receive less opposition from developers, mandatory policies have produced far more affordable units."

■ Increase individuals' assets to reduce dependence on subsidized housing

Create home-ownership programs and prioritize job-creation strategies through community development corporations and resident-owned financial institutions that help low-income people build assets. Support local hiring and livable-wage provisions.[14]

■ Encourage employer-assisted housing

In these housing programs an employee purchases a residence with some financial assistance from his or her employer. Such programs often help first-time home buyers, and home ownership has the added benefit of enabling people to build both equity and financial assets. Employer-assisted housing is especially helpful to working families by enabling them to secure affordable housing near the workplace. Employers benefit by retaining qualified workers, improving community relations and helping to revitalize neighborhoods.

■ Explore other strategies geared toward ensuring that communities revitalize without displacement

- Integrate housing, transportation and land-use planning
- Adopt local and regional zoning practices (such as form-based code) that encourage compact, mixed-income, mixed-use development
- Design "Complete Streets" that accommodate drivers as well as pedestrians, bicyclists and transit users of all ages and abilities
- Reduce parking requirements
- Conduct studies and health impact assessments to ensure that new developments benefit existing residents
- Minimize tax burdens on older lower-income property owners as well as on renters (renters pay property taxes indirectly).
- Engage community members in the development processes

10. Ibid
11. PolicyLink. "The Equitable Development Toolkit" Retrieved February 2014, http://bit.ly/1tJE3RX
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SUCCESS STORIES

■ Macon, Georgia: Tattnall Place

This 97-unit, mixed-income development opened in March 2006. Financed with tax credit equity, HOPE VI funds and a grant from the city of Macon, it is the centerpiece of the Beall's Hill redevelopment. Sixty-five units are for households at or below 60 percent of the area median income. Floor plans include two- and three-story units with large front porches. Community amenities include a swimming pool and a computer center. The project won the 2006 Magnolia Award for Superior Design. Local leaders have preserved housing and re-activated a public park in the area.

Preserved housing in Tattnall Place, Macon, Ga., is part of the Beall's Hill mixed-income redevelopment project.

■ Denver, Colorado: Inclusionary Zoning

To address a growing affordable-housing crisis as real-estate values grew faster than incomes, Denver adopted an inclusionary housing ordinance in 2002. Developments of more than 30 for-sale units must set aside 10 percent as affordable for households earning 50 to 95 percent of the area's median income, depending on household size. Offsets to make the set-asides feasible to developers include a 10 percent density bonus, a $5,600 subsidy per unit for up to 50 units, parking requirement reductions and expedited permits. A total of 3,395 affordable homes were built within three years of the policy's inception.

■ Portland, Oregon: New Columbia

New Columbia is a diverse 82-acre neighborhood built on the site of what had been World War II-era worker barracks and then public housing. Completed in 2007 with HOPE VI and other funds, New Columbia is a walkable community with front porches, two community gardens, a Main Street and "Village Market," several parks and public spaces, a public elementary school, a Boys & Girls Club and a recreation center. New Columbia has 854 housing units, including 622 rental homes and 232 resident-owned homes. Of the rentals, 297 units have a public housing operating subsidy, 73 units have a project-based Section 8 subsidy, 66 units are for seniors and 186 additional units are for households earning less than 60 percent of the area median family income. Of the resident-owned properties, 128 were sold at market rate, 98 were developed by non-profit builders such as Habitat for Humanity and eight were developed using a cohousing model.

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