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Town Maker's Guide to Healthy Building Placement

Town Maker's Guide to Livable Schools

Sample Design Guides

Sample Walkability Audit Checklists

AARP's Pedestrian Mobility and Safety Audit Guide

Best Practices for a Better Built Form from the WALC Institute

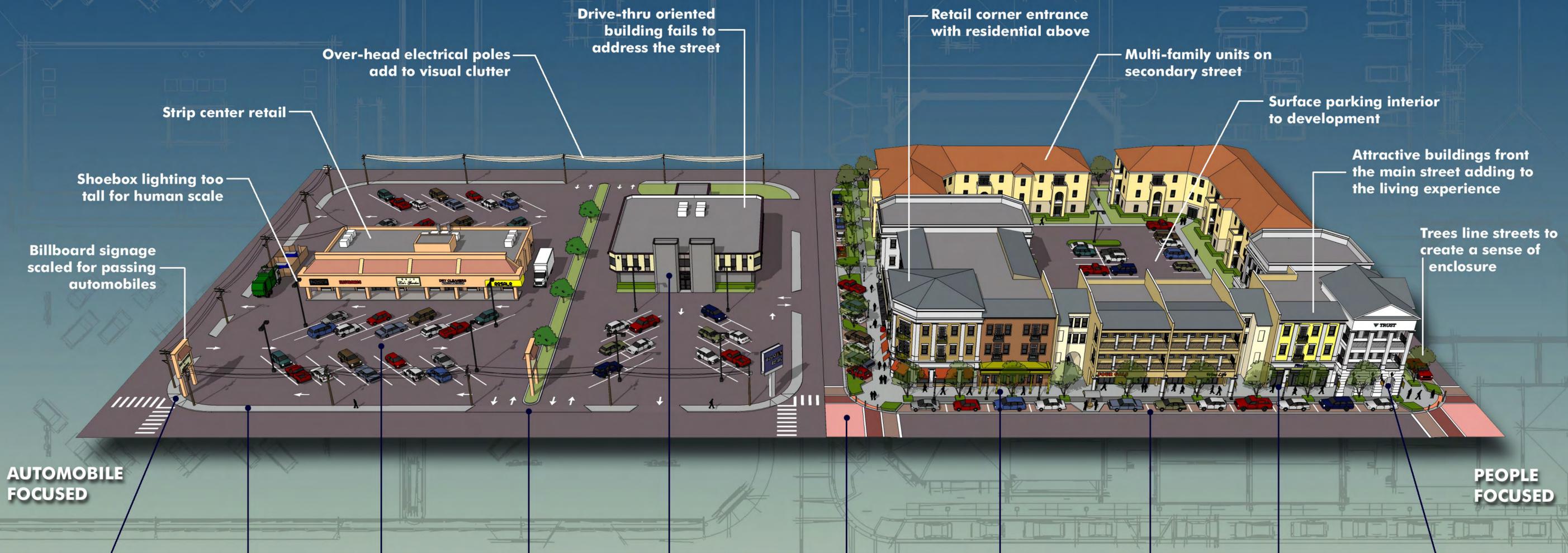


TOWN MAKER'S GUIDE TO HEALTHY BUILDING PLACEMENT

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TOWN MAKER'S GUIDE: Healthy Building Placement



EDGES **SIDEWALKS** **PARKING** **BUILDINGS** **CHARACTER** **EDGES** **SIDEWALKS** **PARKING** **BUILDINGS** **CHARACTER**



<p>Edges are essential for a comfortable walk. Edges define spaces and provide visual cues to guide appropriate behaviors. Open areas such as this create high levels of discomfort for both walkers and drivers. Without an edge, walkers feel they have entered the motorist's realm and motorists feel that pedestrians do not belong, so they do not respect them. Edgeless streets look sick and make people feel sad.</p>	<p>Sidewalks must be a comfortable width (typically 6-10 feet for suburban commercial areas), be separated from the curb with a planter strip of 6-10 feet, be continuous and not open to numerous driveways. In general, the higher the roadway speed the wider the planter strip. This space lacks a sidewalk completely, but even the portion with a walk does not "invite" walking.</p>	<p>Parking set to the front of a building devalues walking in many ways. It creates building-to-building swaths of asphalt as wide as 400 feet. Such inhospitable environments (too hot in the summer, too cold in the winter and lonely all the time) do not honor walking, bicycling, transit, or even auto arrivals. Off-street parking takes three times as much land as on-street parking.</p>	<p>Walkability requires easy and complete access to buildings. When buildings are set back, arrival by foot is plagued with problems. Individual properties often carve up the front of a block into independent parking lots and this fractionalizing of land creates ugly and unpleasant spaces to traverse. It devalues the overall experience and also the overall land value. Property owners rarely take care of these spaces, investing instead in large signs advertising to drivers.</p>	<p>Suburban style strip malls and building types are often devoid of character and personality. They are large, faceless, lifeless, uninteresting, uninspiring spaces. Walkers tend to shun such "voids" and motorists tend to speed up when they come across them. These spaces can be anywhere - they have a universal ugliness. Health studies reveal that people in ugly places have elevated blood pressure. Road rage also increases.</p>	<p>Quality edges provide a protective enclosure satisfying the human eye, heart and foot. Edges address our need for comfort, safety and security. Creating a sense of enclosure usually requires building to the interior edge of walkways, planting ground cover and trees, and including on-street parking to buffer the pedestrian from moving traffic. Edges are essential to an enjoyable walking experience.</p>	<p>Sidewalks of sufficient width allow walking to be the most natural, fun, rewarding and healthy way to travel. They allow people to enjoy walking, a relaxed conversation with another, to linger or sit outdoors at a café, and they encourage people to stay and socialize. Although sidewalks can be made of a number of materials from concrete to pavers, the most pleasant walkways have a simple elegance—they are well constructed and maintained.</p>	<p>The combination of on-street parking and urban buildings carefully screen or fully hide off-street parking. Off-street parking is placed in interior courts or in well landscaped gardens to the side or rear of the building. Thriving downtowns or pleasant villages rarely require off-street parking minimums. In many cases today, municipalities prescribe maximum number of spaces that are allowed, which makes better use of limited space.</p>	<p>Quality buildings not only create an address, they address the street. Well designed urban buildings have 70-90% glass at grade, giving natural surveillance to the street. A palette of colors, shapes, tones, textures, window styles add predictability, authority and dignity to a street. In order to improve mobility and accessibility, buildings need to have convenient breaks and pauses, certainly every 400 feet and sometimes less.</p>	<p>Buildings can be simple in their designs, but they must help contribute to the character, personality, style, complexity, elegance, charm and experience of the street. In this way, they define where we are. We want to play in our environment, celebrate great artistry and cultural achievements, and create a place that is always fun to come back to, enjoy and protect. A great street is also great theatre.</p>
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TOWN MAKER'S GUIDE TO LIVABLE SCHOOLS

For an online copy of the following guide poster, please visit
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TOWN MAKER'S GUIDE: Livable Schools



Cafeteria with rear service

Bus drop-off and pick-up, and teacher/staff parking

Library wing with adjacent reading garden

School is integrated into neighborhood with a mix of housing, offices and retail

Courtyard with outdoor classroom and vegetable garden

Park space with playground, multi-purpose courts, and bathroom building

Main entrance with bike parking and parent drop-off/pick-up

On-street parking

STREETS/PARKING CROSSINGS DROP-OFF/PICK-UP SECURITY TREES SEPARATION SHARED PARKS INTERSECTIONS SIDEWALKS ACCESS



Streets should support walking, bicycling and vehicle movement. Lanes should be no more than 10 feet wide and, if possible, should be separated from on-street parking by a two-foot valley gutter. On-street parking gives motorists a place to wait when picking up children and uses as little as a third of the space of off-street parking. Restricting parking times along the curbs next to the school allows these areas to be used for student drop-off and pick-up. Signs should inform motorists to stay with their cars at all times. Head-out (or reverse) angled parking is the safest and most efficient on-street parking. Head-in angled parking and parallel parking also can be good options. On-site parking may not be avoidable, but can be minimized.



Around schools, drivers should feel that they are entering a pedestrian realm and that people may be using crossings any time of day. Where crossings are located, streets should be designed so that traffic is slow — between 15 and 20 mph — and sight lines are good. At higher speeds, motorists are less likely to yield to pedestrians and the risk increases. Crossings are best with good lighting, when students cross one lane at a time, and when students and drivers can clearly recognize and respond to each other. Median islands, curb extensions (or “bulb outs”) and raised table crossings help create these conditions.



With high rates of students arriving and leaving school in cars, there are many “conflict points” between motorists, walkers and bicyclists. If volumes of traffic are high, on-school drop-off and pick-up patterns can include compact, stacking areas that are monitored at all times by adults to ensure that children are only exiting vehicles at the front of the queue when all cars are stopped. It is helpful to have a “valet” program through which adult volunteers or older students — under the guidance of staff — open and close car doors and help students find their parents. On-street parking and nearby parking options, such as a church parking lot, can help. Signs ask parents to turn off their engines, which helps reduce vehicle emissions and protect children’s lungs.



Schools should be integrated into neighborhood designs to provide high levels of “watchfulness” over children. Homes, apartments and townhouses should be near the streets and their “A” sides — their fronts, where abundant windows allow occupants to look outside — should face the streets where students will be walking and bicycling. Each school building should have windows. Low fences and landscaping features can define play areas and access points. Bicycle parking should be located where it is highly visible and sheltered from the elements.



Street trees not only provide shade and a nice environment, but also create comfort and separation for 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. 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 between parking stalls, which further tightens the visual appearance of the street and reduces travel speeds. Depending on the species, they should be spaced 15 to 25 feet apart.



At the school, it is best to separate the different modes of travel (walking, bicycling, bus and parent driving). Sidewalks and school entries should be designed to keep walking and cycling students from crossing the pathway of motorists. Parking lots should be designed so students don’t need to walk through them to enter or exit the school. When these conflicts cannot be avoided fully, raised table crossings are encouraged. Additional design elements such as colorized or raised crossings improve detection between motorists and students, and they give motorists a clear message that they are to slow down and yield to students.



Neighborhoods are most complete when public spaces such as parks are co-located with schools. In this way, a community’s important assets are available in one place. Parking is shared, shade is available, neighbors keep watch over the park and the school, students have quality places to play or wait for their parents, and social exchange amongst all age groups is fostered. Co-located facilities help hold a community together, providing the highest level of conservation and sustainability.



Intersections near schools should be designed to keep motorists’ speeds under control — typically no higher than 15 to 20 mph — no matter what time of day. Turning speeds are especially important and can be controlled with mini-circles, roundabouts and raised intersections. Curb extensions (also called “bulb outs”) and inset parking help motorists to see pedestrians and pedestrians to see motorists. They also reduce crossing distance time and exposure, and they slow motorists on all turns.



Sidewalks, trails, walkways and ramps should be on both sides of the street around the entire perimeter of the school. Where sidewalk gaps exist, they should be fixed on a priority basis, working out block-by-block from the school. Sidewalks around the school should be at least eight feet wide and should be separated from the curb by a “furniture zone” that can accommodate planter strips, tree wells, hydrants, benches, etc. Where appropriate, on-street parking or bike lanes provide an additional buffer to the sidewalk.



Students should have easy access to the campus from each direction of approach. Adjoining properties shouldn’t be walled off from the school or from the routes to school. Pedestrian and cycling students should be able to use links that shorten trip distances and disperse the traffic for pick-up and drop-off around the school.

Although this document highlights many of the key components of properly placing and designing school sites, there are others to consider. For example, educational programming plays a major role in the activities that need to be accommodated. More space for outdoor physical activity may be needed. The square footage of the building may be less or greater. Renovating an older school may be an option, which requires a cost-benefit analysis. Additionally, local conditions and policies need to be accommodated. School attendance policies affect the distance students must travel and whether they arrive by car, bus, bicycle, or foot. Rural environments, open attendance policies, charter schools and magnet schools can pose challenges to walkability, but motor trips can still be combined with walking trips through strategies such as “Park and Walk” programs.

The following can be of help:
National Center for Safe Routes to School, www.saferoutesinfo.org
Council of Educational Facility Planners International, www.cefpi.org
American Architectural Foundation, www.archfoundation.org
National Trust for Historic Preservation, www.preservationnation.org

SAMPLE DESIGN GUIDES



Casper Safe Routes to School Design Guide



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Casper Safe Routes to School Design Guide

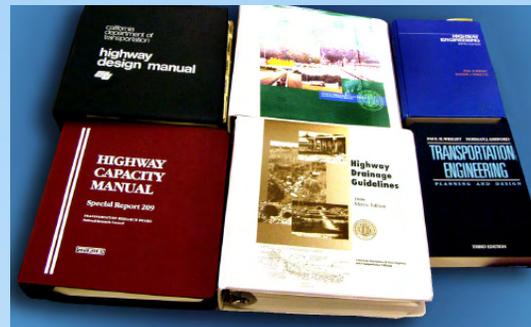
Overview

Why Added Guidelines? With recent, strong trends toward Safe Routes to School, Complete Streets Policies, sustainable transportation, traffic calming, rebuilding downtowns, neighborhoods/streets for people, the creation of compact villages for improved walkability and livability, and other measures reducing traffic growth, old engineering guidelines come up short. Engineers and risk management specialists insist that we need new guidelines.

Background: Conventional planning and engineering documents that built our current stock of roadways were written in a 60-80 year era where our only focus was on moving cars efficiently and safely. The negative impact of this approach on the value of inner city buildings and homes; on walkability and livability and active lifestyles; and on the safety of those outside of cars, was not fully understood, measured, or addressed. Over time, this practice added fuel to sprawl, degrading town centers. This practice was harmful to the civic, retail, economic and social life of streets. People with the greatest access to autos had the best transportation. This practice ignored children, older drivers and people with disabilities and many in our service industry. A focus on streets for efficient car movement also impacted health, wellness and quality of life of people of all ages. Autos replaced feet. Vehicle dependency kept growing, and eventually grew five times faster than the U.S. population. Now that there is a new era, which calls for a balanced transportation system, transportation equity, sustainability, urban infill and renewed prosperity of towns and regions, new outlooks and new tools are needed. These new tools must be understood by many. These design guidelines do not replace conventional tools used by the engineering community. State and national standards, operational manuals, engineering judgement and common sense always apply. Instead, this guide serves as a baseline for creative, insightful judgement of how to produce desired results of increased active transportation and increased property values. Many details need to be worked out and much learning must take place. Fortunately, you are not alone. Many other towns are using these tools with great success and there are many others in the region that you can check with as you begin this new era.



Left: A great neighborhood. Well before the modern science of traffic engineering was born in the mid-1920s, architects and developers knew how to build neighborhoods that kept traffic speeds low while creating maximum beauty and function for all means of travel. It is time for multiple professions to come back together, to influence one another, to build great places for people to live, work, shop, play and socialize. This guide will help us enter this new era.



These new guidelines should be formally adopted by elected officials. They supplement; they do not replace existing manuals. For the *Casper Safe Routes to School Program*, these guidelines are an important start to much broader thinking. Once these features are implemented around a number of schools, it is anticipated that others in the community will realize that many of these tools have broader community building applications. The authors urge planning and engineering communities to build each of the pilot projects to become exemplary models. By paying close attention to how well each thoughtfully designed and placed tool leads to the desired effect, and working to gain popular support by the majority who use these streets, these tools will prove their worth.

Casper Safe Routes to School Design Guide

Crosswalk markings should be highly visible at all times. As a general rule, the higher the volume and speed of traffic, the more essential it becomes to use brighter, wider, more visible and durable markings. Parallel (to direction of travel) bars shown in these photos are often the best design, allowing motorists' wheels to traverse the lines without significant wear. Markings are generally set so that motorist wheels track through voids, rather than over markings, lengthening the life and visibility of markings. Keep markings at least ten feet wide, and wider in higher speed locations, to aid visual detection. Another helpful tool, especially in snow country, is grinding into the pavement about one-third of an inch, then applying either a commercial laminate or hot ceramic mix (which is being tested in Golden, Colorado, and may last the life of the asphalt or concrete). In an ideal world, both lateral lines and edge lines are used. People with visibility issues find it helpful to have a detectable edge. When possible, keep crosswalk markings close to the intersecting streets (not set back).

Cost: Affordable to Moderate. Typical range from \$250 to \$2,000 each. Costs vary widely based on the quality of paints, laminates, scoring/imbedding and other means to prolong the life and visibility of markings.

Benefits: Identifies best crossing locations, further defines intersections, slightly increases yielding behavior, and a helpful reminder to motorists of their duty to yield. If motorists do not yield, good markings make it easier to enforce traffic laws, which ultimately creates higher compliance of the law.

Details: Although a variety of crosswalk markings are available, the best are not fully discussed in standard engineering documents. Crossings need to be visible year round (as much as possible) and markings are typically used in conjunction with signing and good street lighting. School crossing signs are required in locations away from signalized intersections, and they are advised in many signalized locations. Crosswalk markings are only a beginning point. By maintaining low speeds near schools, drivers' desire to yield increases.



Left: High visibility marking, Middle: Ladder style, preferred by visual impaired. Bottom: Additional markings are used for added compliance and complications. Note that crosswalk markings appear on a hill crest, where they are hard to detect. Give motorists a break by putting them on the alert to all crossings.



Casper Safe Routes to School Design Guide

Crosswalk signs should be visible at all times. As a general rule, the higher the volume and speed of traffic, the more essential it becomes to use brighter, wider, more visible and durable signing. The most recent version of the Manual on Uniform Traffic Control Devices (MUTCD) and other aids, should be consulted as a starting point. We provide supplemental and emphasis details and applications in this guide. When possible, “double sign” school signs on all approaches, as shown in the first two images to the right. This can be done when medians are used, and on narrower streets, by signing both sides of the street. Sign locations are important. Place signs (and lighting) together, and place signs where they are highly visible and where you anticipate crossings. There are a number of new enhanced signs that are believed to add to the effectiveness and compliance of motorist response. Some are shown here. We recommend that you “test” motorist behavior through careful observations, and, as appropriate, through your own “step out” surveys. Low yielding rates often indicate that higher level measures are needed. Engineering must go beyond even the best guides. Always observe and then customize your tools for desired results for each location.

Cost: Affordable to Moderate. Typical range from \$250 to \$2,000 each. Costs vary widely based on the quality of paints, laminates, scoring/imbedding and other means to prolong the life and visibility of markings.

Benefits: Identifies best crossing locations, further defines intersections, slightly increases yielding behavior, and they are helpful reminders to motorists of their duty to yield. Then if they do not yield, it is easier to enforce traffic laws, which results in higher compliance for law.

Details: Although a variety of crosswalk markings are available, the best are not fully discussed in standard engineering documents. Crossings need to be visible year round (as much as possible) and markings are typically used in conjunction with signing. School crossing signs are required in locations away from signalized intersections, and they are advised in some signalized locations. Consult the Manual of Uniform Traffic Control Devices for basic information, then be ready to exceed those guidelines for the desired effect.



Casper Safe Routes to School Design Guide

Crossing islands are one of the best tools for simplifying the crossing of wide streets. Used with curb extensions, they also get pedestrians out beyond parked cars and other visual obstructions. Crossing islands are used on all categories of streets, and they have their highest return on investment when they create more courteous yielding behaviors by motorists. Well designed crossing islands achieve yielding rates above 80%. Many other tools, like Rapid Flash Beacons, or raised crossings, or some other type of motorist alert, are used when it is necessary to increase yielding behavior. As a general rule, crossing islands are preferable to signal controlled crossings, due to their performance, much lower installation and maintenance cost, and reduced waiting times. Crossing islands are also used in conjunction with road diets--taking 4-lane, high speed roads down to better behaving 3-lane roadways. Crossing islands can also be used with signals (at intersections) and half signals (at midblock locations).

Cost: Affordable to Moderate. Typical range from \$5,000 to \$15,000 each, depending on width, complexity and other aids that may be needed for high levels of compliance. When signals are added, costs can be in the \$30,000 to \$60,000 range.

Benefits: Assists by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000 ADT. Volumes above 8,000 may require added tools, such as Rapid Flash Beacons.

Details: Crossing islands, like most traffic calming features, perform best with both tall trees and low ground cover. When curves or hill crests complicate crossing locations, median islands are often extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.



Islands can be as little as 8 feet wide. Generally they are 20-40 feet long, but they can be longer. Adding slow growth ground cover and tall trees helps with the detection of the islands and crossings, and landscaping helps eliminate ugly “sign gardens” conventional engineers use to make certain drivers see the islands. The two streets have reduced numbers of lanes, from 5-lanes (above) and 4 lanes (below).



Casper Safe Routes to School Design Guide

Raised Midblock Crossings

Raised Midblock Crossings are used between intersections, typically when blocks are long, or in other locations where speeds are higher than desired, or where sight distances are poor. Raised midblock crossings have many advantages, especially due to their ability to maintain speeds at 15-20 mph 24 hours a day. Raised crossings can be used in all climates, including snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used in the design. Trees and other landscaping are important for detection, and for added neighborhood acceptance. Features, such as bollards, paver stones, curb extensions, colorized concrete or colorized asphalt are often specified for added effect. Raised crossings are used widely in snow cities such as Golden, Colorado, Ft Collins, Colorado; Minneapolis, Minnesota and Cambridge, Massachusetts.

Cost: Affordable to Moderate. Typical range from \$5,000 to 15,000 each, depending on length and quality. The more colors and materials, the higher the cost (and effectiveness).

Benefits: Assists people on foot by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines and lighting. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000. ADT although they can be used with higher volumes. Volumes above 8,000 may require added tools, such as Rapid Flash Beacons.

Details: Crossing islands, like most traffic calming features, perform best with tall trees and low, easy to maintain ground cover. When curves or hill crests complicate crossing locations, median islands are extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.



Casper Safe Routes to School Design Guide

Curb Extensions

Curb extensions are a nearly universal tool for school areas. In transforming overly wide streets, curb extensions (also known as bulb outs, elephant ears and nibs) bring down right turning speeds, identify important crossings, and make it much easier for motorists to see children and for children to see motorists. When used in a series, curb extensions can significantly bring motorist speeds to acceptable levels. Curb extensions can be used at intersections, midblock, inside of parking strips (tree wells) and other locations. Although many curb extensions are kept plain in appearance, at the entry to a neighborhood they can be landscaped to serve as a attractive gateways. Although there are many benefits to curb extensions, they greatly reduce crossing distances for overly wide streets. In an ideal world, students would not be asked to cross more than 20-26 feet.

Cost: Affordable to Moderate. Typically range from \$3,000 to \$30,000 each. Costs vary widely based on if the curb extension is attached to the curb, interrupting drainage, or left unattached, raising maintenance costs. Each community must take into account construction cost and maintenance costs.

Benefits: Slows motorists' speeds at most important locations, especially at intersections. Curb extensions open up sight lines for pedestrians to see motorists, and for motorists to see pedestrians. In some cases, they can become rain gardens, and otherwise reclaim non-essential road space, reducing crossing distances for vulnerable road users. The cost range of curb extensions is wide, largely due to the decision to attach or leave the curb extension unattached to curb lines.

Details: Apply truck turning templates when designing curb extensions. On low volume side streets it is suggested that oversized vehicles be permitted to cross over the street center. Many designs apply. All efforts should be made to make streets feel narrower, and to "read" slower.



Today experienced traffic engineers know that both slow growth ground cover and trees enhance road safety. Well landscaped curb extensions are often seen on approach 500 feet before intersections, keeping speeds low for longer distances. Use of landscaping has proven to be helpful in bringing down both speeds and crashes. Curb extension are one of the best tools to create safe and efficient crossings.



Casper Safe Routes to School Design Guide

Mini Circles

Mini Circles are one of the most popular and effective tools for calming traffic near schools. These inexpensive features do not interrupt drainage and they are the most affordable tool for bringing speeds under control. Mini-circles work outward from intersections on all three or all four legs of approaching traffic. Mini-Circles bring speeds down to levels where motorists are more courteous to pedestrians and they allow all types of turns, including U-turns, which can assist with school area traffic management. Mini-circles are popular in many neighborhoods, due to their ability to create a park atmosphere. Over 1,200 mini-circles are in place in Seattle, where they have reduced crashes 93%, and personal injury crashes 99%. Mini-Circles also work well in snow cities, such as Missoula, Montana. A common engineering mistake is to put in four way stops. This is a poor practice that leads to disrespect. Mini-circles require yielding behavior, not stopping behavior.

Cost: Affordable. Typically range from \$8,000 to \$35,000 each. Less expensive if built as new construction. More expensive mini-circles are designed as large gardens, or built in large intersections.

Benefits: Brings speeds and crashes down in all directions to 5-18 mph. Most commonly used on roadways with daily traffic volumes below 8,000.

Details: It bears repeating, **do not use stop signs** with mini circles. Mini-Circles are designed to keep traffic flowing quietly and effortlessly at low speeds. Mini-circles work best in many communities when not signed at all. When signing is necessary use Yield signs and Yield markings. Sometimes a simple directional arrow is used. Use with landscaping, especially tall trees (under-trimmed to 7 foot), and use low ground cover (typically with low maintenance xeroscape or native plant materials). The further out the mini-circle is viewed the greater the safety benefit. Truck turning templates are not used. Large (oversized) vehicles, such as emergency responders, make left hand turns the way they do today, going left across the face, when there is no approaching traffic.



Casper Safe Routes to School Design Guide

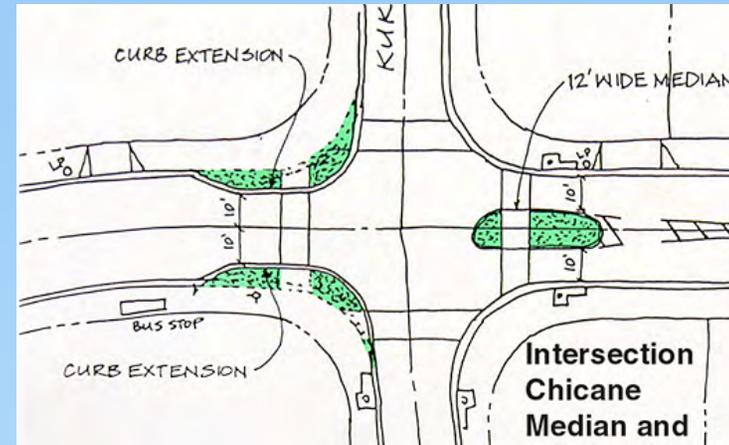
Intersection Chicanes

Intersection Chicanes involve two curb extensions on one side of the intersection, and a median on the opposite side. This combination of treatments brings the motorist toward the center, then brings them back toward the side. This resulting deflection path brings speeds down to the desired level of 15-20 mph. All raised areas become gardens for the neighborhood. Both sides of the intersection are narrowed, minimizing crossing distance and time. As a general rule the side with curb extensions is narrowed to 20-26 feet. Chicanes can be used on streets with volumes as high as 12,000 ADT. Use of intersection chicanes eliminates the cost of going to more expensive traffic signals, or noisy and problematic 4-way stop controls. These treatments are preferred by emergency responders and transit providers to more intrusive four way stops and raised crossings.

Cost: Affordable to Moderate. Typical range from \$15,000 to \$45,000 each. Costs vary widely, based on if curb extensions are attached to the curb (interrupting drainage) or detached (creating a higher maintenance cost).

Benefits: Assists by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000 ADT.

Details: Intersection chicanes, like most traffic calming features, perform best with both tall trees and low ground cover. When curves or hill crests complicate crossing locations, median islands are often extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.



Casper Safe Routes to School Design Guide

Raised Intersection Crossings

Raised Crossings are not only used in midblock locations, they are used at intersections. They can be used in right turn channelized island, or in regular intersections (see photo examples). Crossings are designed to restrict all through speeds to 15-20 mph 24 hours a day. Raised crossings at intersections can be used in snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Features, such as bollards, paver stones, curb extensions, colorized concrete or colorized asphalt are often specified for added effect. Raised crossings at intersections are used widely in snow cities such as Stamford, Connecticut and Cambridge, Massachusetts.

Cost: Moderate. Typical range from \$10-20,000 each. Benefits: Reduces speed and brings crashes down to 12-18 mph. Most commonly used on roadways with daily traffic volumes below 12,000 ADT, they can also be used in select locations with higher volumes.

Details: Best used when roadways are overly wide and when there is a desire to bring down speeds. Raised crossings at intersections are often used to accent an especially important crossing leg and to control both through traffic speeds, and turning speeds. Crossings are ideal for school entries, and they are used on school properties, especially on entries to parking lots. Both the detection of the raised crossing and the slowing effects are enhanced when different colors, and International Yield pavement markings are used.



Casper Safe Routes to School Design Guide

Raised Intersection

Raised Intersections are used at intersections where roundabouts or mini-circles are not functional or practical, and where speeds need to be brought under control. They are different from raised intersection crossings, since they cover the entire intersection. This raises their value and cost considerably. Raised intersections are best constructed as new schools are built, but they can be applied to existing street sections as well. Raised intersections can be expensive, due to their potential to interrupt drainage. Meanwhile, they have many advantages to maintain speeds 24 hours a day. Raised intersections can be used in snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Features, such as bollards, paver stones, colorized concrete or colorized asphalt are often specified. Raised intersections work well in snow cities such as Minneapolis, Minnesota or Cambridge, Massachusetts.



Cost: Moderate to High. Typically range from \$60,000 to \$125,000 each.

Benefits: Brings speed and crashes down in all directions to 10-15 mph. Most commonly used on roadways with daily traffic volumes below 20,000 ADT, although new treatments include volumes of 23,000.

Details: High emphasis crosswalk markings are used with raised intersections for an added slowing effect. Note the crossings are kept above the change in grade. Raised intersections are often used with curb extensions. Planned in advance with new construction, drainage is addressed at the base of the crossing grade. Use of colorized concrete, or pavers helps achieve an added slowing effect. Raised intersections can be used with signalized or non-signalized intersections. International yield lines are added for greater emphasis.



Casper Safe Routes to School Design Guide

Short Medians

Short Medians are similar to Mini-Circles, and they help bring down speeds near schools. Short medians are placed away from intersections, but they can be located near driveways. These inexpensive features do not interrupt drainage and they have many other advantages. Short Medians bring speeds down to levels where motorists are more courteous to pedestrians and they allow U-turns, which can assist with school area traffic management. Short Medians also serve as gateways, where they announce arrival at an important location, such as a school. They help put motorists on greater alert. They work well in snow cities, as well as more temperate climates.

Cost: Affordable to Moderate. Short medians generally range from \$12,000 to \$25,000 each.

Benefits: Brings speed and crashes down in all directions to 10-15 mph. Most commonly used on roadways with daily traffic volumes below 2,000 ADT.

Details: Short medians are generally used with attractive landscaping and lighting, but overhead lamps can also be used. For landscaping, use tall trees (under-trimmed to 7 foot), and use low ground cover (typically with low maintenance xeroscape or native plant materials). Landscaping helps bring down speeds from distances as far out as 500 feet. The further out the short median is viewed the greater the safety benefit. It is important to note that short medians require the removal of on-street parking for 100-150 feet.



Casper Safe Routes to School Design Guide

Inset Parking

Inset parking visually narrows streets and brings down traffic speeds, while providing the most sustainable and affordable parking. Speeds are brought down even more when tree wells are used to provide canopies in the street. Since it already has its own turn radii into each spot and provides access, on-street parking only takes up one-third of the amount of land as off-street parking. But the primary reason for maximizing parking on street is to help civilize streets that were overbuilt for speed.

Cost: Affordable to Moderate. Typically ranges from \$5,000 to \$10,000 per parking space, which is similar to the cost of off-street parking.

Benefits: Slows traffic speeds while maximizing the use of streets.

Details: Parking lanes are typically nine feet wide and fifteen feet deep. When streets are overly wide, adding on-street parking helps reduce the overall width of the street while bringing down travel speeds. Angled parking stores the maximum number of cars. When “head out” angled parking is used, parking can be provided in even tighter locations.



Casper Safe Routes to School Design Guide

Bike Lanes

One of the most cost effective ways to reduce speed while improving overall vehicular flow and creating improved conditions for bicycling and walking, is the conversion of overly wide roads to bike lanes. Generally, travel lanes can be reduced to 10 feet. On multiple lane roads this often allows a shifting of lane width outward, then conversion to bike lanes. There are 22 benefits to bike lanes, and only 2 of these benefits are exclusively for bicyclists. All other benefits are to all users of the roadway. Narrower travel and storage lanes on all functional classification of at grade roadways are proving to be slightly safer, or as safer as wider lanes. Motorists appear to become slightly more attentive when lanes are narrowed from 11-12 feet. With higher than average truck or heavy bus flow, wider outer lanes can be incorporated. Engineering judgement applies.

Cost: Affordable to Moderate. Typically range from \$3,000 to \$10,000 per mile, includes signs and markings. Higher costs are for more visible markings, and higher grade material, which generally has a longer maintenance life.

Benefits: Few other changes to a roadway offer more benefits than adding bike lanes. Motorists benefit from added turning radii and improved sight lines. Bike lanes create added border width to fixed objects, separate motorists from sidewalks, allow for added operations, reduce the unravelling of the roadway edge, and provide other maintenance benefits.

Details: Bike lanes are marked at 5-7 feet in width. Bike lane lines are marked at 6", 8" or 10" in width, to create added slowing effects to motorists. Bike lane markings are incorporated, along with proper signage.



When intersections become so complex and challenging that signals are added, there is often ample justification to go beyond conventional standards to address the needs of people walking and bicycling. Quite often, engineering technicians are trained only to maximize the flow of vehicular traffic. Too often, the movements of other people are overlooked. As a result many people on bike or on foot are not detected, their needs are not fully addressed, or they are made to wait lengthy periods. Many people “learn” to find ways to avoid crossing at intersections. This is wrong, and the practice of overlooking pedestrians and bicyclists should be recognized as outdated, single mode, thinking. There are many steps to take. Here are a few of the most common:

- Set “Walk” signals for crossing minor streets to always recall to “WALK”. In addition, set signal timing so that the walk interval is as long as feasible for the green time in the concurrent vehicle phase.
- Use the same practice on major street crossings, continuing to pay attention to special vehicular needs during peak hour flows.
- Use countdown signals on a soft replacement basis, and start with high priority walking locations, such as schools, important transit stops, plazas, parks, medical centers and town centers.
- Eliminate Right-Turn-On-Red (ROTR) if motorists are not using appropriate levels of care. Consider “pedestrian lead intervals” to step pedestrians out first, when high pedestrian counts, problems with turning motorists or other conditions warrant this phase.
- Use enhanced crosswalk markings, and bold stop bars to better identify crossings and to keep motorists out of crossing areas.
- Remove push button controls from people rich locations (unless these buttons activate signals on a recall demand).
- Generally, strive to recall signals on a frequent basis to minimize wait times for pedestrians. Full cycle lengths of 60-90 seconds are best. If this cannot be done during commute hours, see if this can be achieved in off-peak hours.



Cost: Highly affordable. Typically all costs are covered under normal maintenance, operations and staffing budgets. In many cases county or state agencies must be contacted to make changes. Training local technicians may be needed.

Benefits: Intersections are critical if walking, bicycling and motoring are to work, and work together. As signalized intersections are made equitable to all modes of travel more people will walk and bicycle. People who cross at intersections are more predictable. Drivers appreciate predictable and compliant behavior. The engineer has an essential role to play if high levels of compliance are to be achieved.

SAMPLE WALKABILITY AUDIT CHECKLISTS



HEALTHY DEVELOPMENT CHECKLIST

Please provide written responses to each applicable question. For those questions which are not applicable, please indicate so on the form. Attach additional sheets if more space is necessary to respond fully to the questions. Submit completed form with your project/development application.

PROJECT NAME: _____

ADDRESS/LOCATION: _____

CASE #: _____

TYPE OF PROJECT: Residential Mixed Commercial Office Civic

LAND USE

YES NO

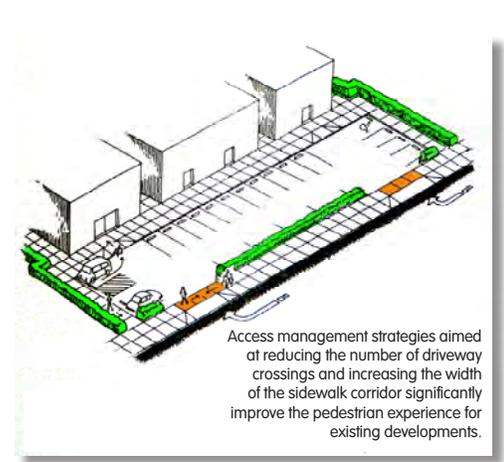
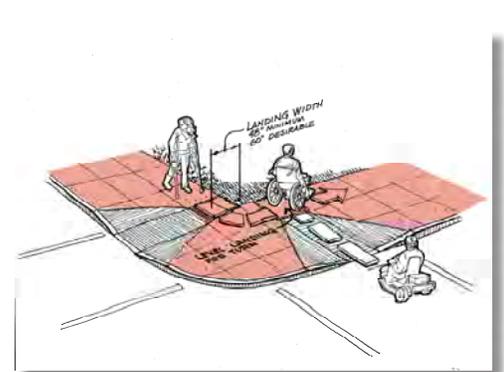
- Does the project/development promote interaction between neighbors?
If YES please list: _____
- Is the physical design of the project harmonious with the overall neighborhood?
- Is this development adjacent to existing development and connecting to the development with pedestrian links and roadway connections?
- Is there an adequate mix of land uses that provide a variety of housing choices?
- Do these mixes provide for a great diversity in incomes, and especially provide for affordability?
- Are there locations for non residential land uses that are integrated with the residential?
- Is the land use configured around a walkable block size (1/4 mile perimeter)?
- Is there a range of density permitted in the neighborhood?
- Are fronts of homes properly placed and have windows watching over schools, parks, streets, trails and other public places?
- Is the architecture of buildings attractive and supportive of life on the street, park, school?
- Are there provisions eliminating garages from "mooning" the street (i.e. required garage setbacks, lot frontage percentage)?
- Are public buildings, parks and other common destinations properly placed to maximize the number of people that can walk to them?
- Can the majority of people walk safely and comfortably in ten minutes (2500 feet), and without crossing dangerous intersections to an elementary school?
- Can the majority of people walk safely and comfortably in twenty minutes (5000 feet), and without crossing dangerous intersections to a high school?
- Is there too much emphasis on providing large amounts of off-street parking (relates to affordability, density)?



TRANSPORTATION, STREETSCAPING, & STREET DESIGN

YES NO

- Does the project/development achieve a connectivity index of 1.4? The index is calculated by dividing the number of street links (street sections between intersections, including cul-de-sacs) by the number of street nodes (intersections and cul-de-sacs). A grid street network would yield an index of 2.0.
- Does the project/development provide mobility options for those who cannot drive?
- Does the project/development have a well connected sidewalk system that lead to local destinations?
If YES what is the proposed width of the sidewalks (5.0 foot minimum recommended)? _____
- Are sidewalks detached from the curb allowing planter strips to take up driveway elevation changes?
- Do all corners have ADA accessible ramps (2 ramps per corner preferred)?
- Do planter strips offer canopy street trees (each 15-30 feet recommended)?
- If median tree plantings are preferred, are plantings adequate for canopy development (each 15-30 feet recommended)?
- Are there adequate provisions made for proper care and maintenance of canopy trees?
- Do building practices eliminate privacy fences (above 4.0 feet) toward the public side of properties?
- Are there specifications that public facing fencing be attractive and transparent above 4.0 feet?
- Do curbs, swales, curb extensions, or other designs keep cars parked in correct locations (no rollover curbs)?
- Does the project/development have, or connect to, a trail system for walking or biking?
- Does the project/development contain elements that enhance the feeling of neighborhood security and safety?
- Are local streetlights provided?
- Are houses oriented toward the street to provide "eyes on the street?"
- Are the buildings addressing the street? (i.e. front doors)
- Is there parking between the building and the street?
- Can a child walk safely, comfortably, and feel watched over enroute to school?
- Are there sidewalks/pathways along the route to the school(s)?
What is the walking distance to the area's schools? _____
- Is the visibility at intersections good? Can drivers see short children, physically handicapped?
- Does the route contain known dangerous intersections?
If YES please list _____
- Are there crossing guards at these intersections?
- Will the project/development contain a significant elderly population?
- Can the elderly walk to important destinations (i.e. banks, post office community centers, and library)? What is the walking distance to these destinations? _____



TRANSPORTATION, STREETSCAPING, & STREET DESIGN CONTINUED

YES NO

- Are there sidewalks/pathways along the routes to these destinations?
- Is the overall speed at or below 25 mph for all local streets?
- Is the overall speed at or below 30 mph for all collector streets?
- Does the project contain design elements to calm traffic such as curb extensions, mini-circles, parking chicanes, roundabouts, medians, raised street crossings, or similar features?
If YES please list _____
- Does the project/development present unsafe conditions or deter access and free mobility for the physically handicapped?
- For projects/development on arterial streets, does the plan include pedestrian crossing signals and/or mid-block crossing islands?
- Is public transportation available?
If YES, where and how close is the nearest bus/train stop? _____
- Does the nearest bus/train stop have a shelter?
- Does the nearest the bus/train stop have a bench and litter can?
- Do curb extensions or other treatments prevent motorists from parking too close to corners?
- If narrow streets are used, do streets provide a physical space (20 feet wide) every 200 feet for emergency response operations?
- If alleys are used, is there high transparency (surveillance) in the alley?
- If paseos (connectors or links) are used, is there high transparency (surveillance) to the paseo?
- Do schools, parks, and other public destinations have adequate well located and secure bike parking?



PARKS & OPEN SPACE

YES NO

- Can the majority of people walk safely and comfortably in five minutes (1500 feet) to a public gathering place, park, plaza, or community center?
- Are there an adequate number of parks provided within walking distance (1/8 — 1/4 mile) from every residence?
- Are there sidewalks/pathways, ADA ramps along the route to the above services?
- What is the walking distance to the area's amenities? _____
- Is the size of parks and open space adequate for the amount of potential residents?
- Are there a number of buildings/houses that watch over parks, trails, and open space?
- Are these parks well used? If not yet built, are there a number of things to discover and do in these parks?
- Do parks have appropriate on-street parking, or is there too much off-street parking?





Tips,
Tools and
Resources for
Organizers

Sidewalks and Streets Survey

Communities can make walking safer by teaching small groups to take simple “walkability” surveys and to take recommended actions for community improvements. Your involvement will make a difference to people you care about.

INCLUDED IN THIS KIT:

- 1** Overview
- 2** The Basic Steps
- 4** Sidewalks and Streets Survey
- 14** Take Action: How to Improve Your Community Rating
- 16** Further Steps to Improve Your Community's Rating
- 18** Resources

July 15, 2010



OVERVIEW

The problem

Too many communities in the United States are designed for automobile travel, with very little consideration given to the needs of walkers. Lack of sidewalks, construction of sidewalks too close to roads and lack of maintenance are all factors that discourage people from walking regularly.

The solution

You can help make walking safer by teaching small groups to take simple “walkability” surveys. Once people rate an area and identify concerns, the group can take action to improve walkability. This toolkit will help you do that.

Time commitment

About an hour to complete a walkability survey. More time to follow up and pursue the needed improvements; this will depend on the extent of improvements and community cooperation to get the work done.

Special considerations

None

Who can do this?

Everyone.

Great reasons to do this project

- Increase exercise opportunities for your community.
- Boost social interaction among neighbors by creating a walking-friendly environment.
- Helping reduce traffic congestion and pollution by leaving the car at home.
- Increase property values: Walkable communities are associated with higher home values!



After driving, walking is the most popular means of travel in the United States. It's easy, cheap and gentle on the body and environment.



The Basic Steps

STEP 1: Get Ready

You'll want to map out a walkable area that can get you and your neighbors to and from where you need to go. This could be your own neighborhood or one surrounding your local faith-based group or senior center. You'll also want to gather a few materials, such as street maps, a digital camera, comfortable walking shoes, a hat and sunscreen.

STEP 2: Recruit People To Do A Survey

Start with friends and neighbors. It's helpful to include someone with a physical challenge (e.g., someone using a walker, wheelchair or cane, or even someone who pushes a baby stroller). That will help you get a true sense of an area's walkability.

STEP 3: Review the Survey and Identify Your Route

- See the walkability survey below.
- Map out a logical walking route in your community, ideally one that would take you and your neighbors to and from where you need to go.
- Gather the following materials:
 - Street maps
 - Clipboards, notepaper, pens and disposable or digital cameras (all important for documenting what needs to be improved)
 - Comfortable walking shoes and, if needed, a hat and sunscreen.

STEP 4: Choose a Date and Time for the Survey



STEP 5: Conduct the Survey and Rate Your Route

Print out and bring surveys and materials for each member of your group. Conduct the survey and see how your community stacks up.



4,378 pedestrians were killed by motor vehicles in 2008 in the U.S., according to the National Highway Traffic Safety Administration.

STEP 6: Take Action to Make Your Community More Walkable

After you've rated your walk and identified problem areas, review "Take Action: How to Improve Your Community's Rating from the Sidewalks and Streets Survey" (see below), and work with your group to take action.

STEP 7: Inspire Others on CreateTheGood.org!

TELL US WHAT YOU DID!

We want to hear stories about how you helped give back to your community.

www.createthegood.org/stories

You just might inspire others to do the same.

SHARE FEEDBACK

We are always looking for feedback on our materials, so please let us know how this guide was helpful or what additional information you wish we could have included. Share lessons learned and other tips for others who are using walkability surveys: www.aarp.org/community/groups/CreateTheGood.

KEEP UP THE GOOD!

Remember: Whether you've got five minutes, five hours or five days, you can make a positive impact in your community. And if you have more time, consider organizing another service activity, finding local opportunities and posting your events at www.CreateTheGood.org/post-opportunity.



Sidewalks and Streets Survey

Review the checklist before you go, and as you walk, note the locations of things that you'd like to change. Take photos of problem areas and things you like and would like to see more of. Suggestions for photos to take include:

- Crossing signals
- Overhead traffic lights
- Turning lanes
- Curb cuts
- Sidewalks
- Crosswalk lines and vehicle stop lines
- Important signage

The survey contains the following sections to help guide and record your observations:

- Section A: Mapping Out Your Walk Survey Area
- Section B: Crossing the Street (Intersections)
- Section C: Sidewalks
- Section D: Driver Behavior
- Section E: Safety
- Section F: Comfort and Appeal
- Section G: Overall Ratings and Observations

Each section asks you to rate your streets or intersections as Excellent, Good, Fair or Poor. Here's what each rating means:

- Excellent: Area is very walk-friendly and safe
- Good: Area is moderately walk-friendly and safe
- Fair: Area is somewhat walk-friendly and safe
- Poor: Area is not walk-friendly or safe

Finally, explore how to improve your community's rating by reviewing the ideas in "Take Action: How to Improve Your Community's Rating From the Sidewalks and Streets Survey" (on page 14).

So...got your cameras, street maps and other gear? Then get ready, set, go!



Section A: Mapping Out Your Walk Survey Area

This survey will tell you what to look for on sidewalks and streets within the walkable area that you choose. Your walkable area could be as small as one intersection or could include several streets and intersections. Consider starting small, with one or two intersections and a connecting street.

Remember, the smaller your walk survey area, the easier it is to follow up and get results.

Please record the following for your walk survey area:

County _____ City/Town _____

State _____ Zip code _____

Next draw a simple map of your walk survey area and label the streets. Here is an example:

Survey Map



Now draw your own walk survey area. Be sure to write in N, E, S and W (North, East, South and West) next to the arrows to show which direction the streets are facing.

Your map will help you organize fellow walkers and review the area you have surveyed. Make a copy for each fellow walker to make notes on. For example, they can note the spot where a telephone pole blocks the sidewalk or where a curb cut is needed and then take photos of what they find. If you are creating a final report, include a clean copy of your map along with the photos taken.



Section B: Crossing the Street (Intersections)

Please complete one Section B page for each intersection you observe within your walkable area. We suggest allowing 20-30 minutes per intersection.

Intersection observed: location at _____ and _____
Street Name 1 *Street Name 2*

Day of week: _____ Time observations began: _____ a.m. p.m.

Date: _____ Time observations ended: _____ a.m. p.m.

DIRECTIONS: Place a ✓ below next to any items that are a problem for walkers and note:

- What might especially be a problem for a child, senior or person with disabilities?
- What is the exact location(s) of each problem? Record a landmark or side of street (north, south, east or west) on the blank line to the right of each item you check.

Problems for walkers

Location

- Crossing doesn't have a pedestrian signal or audible signal _____
- Pedestrian signal doesn't give people walking at average speed enough time to cross (WALK+DON'T WALK)
Time allowed on signal (minutes:seconds) _____:_____
- Pedestrian signal doesn't give people who walk more slowly enough time to cross _____
- Traffic signal makes pedestrians wait too long before crossing _____
- Need a traffic signal or crosswalk _____
- Push-to-walk signal is not available/operating _____
- Crosswalk is not marked or poorly marked _____
- Have to walk too far (>300 ft.) for a safe place to cross the street _____
- Road is too wide to cross safely _____
- No median on streets with 2+ lanes _____



Sidewalks and Streets Survey

Parked cars on the street or utility poles are blocking the view of traffic _____

Other issues and observations **(please specify)**

Who is using the crosswalk?	Make hatch marks to indicate number of people/ things observed
People walking at average speed	total #:
People using assistive devices (canes, wheelchairs, walkers)	total #:
People with young children or strollers	total #:
People crossing against signal	total #:
Cyclists	total #:
Skateboarders	total #:
Scooters	total #:
Other	total #:

Overall rating of street crossings in walk survey area:

Excellent Good Fair Poor



Section D: Driver Behavior

Please complete one page for the entire walkable area on your survey map.

Day of week: _____ Time observations began: _____ a.m. p.m.

Date: _____ Time observations ended: _____ a.m. p.m.

DIRECTIONS: Place a ✓ below next to any items that are a problem for walkers and note:

- What might especially be a problem for a child, senior or person with disabilities?
- Note landmarks, streets or sides of streets (north, south, east or west) on the blank line to the right of each item you check.

Problems for walkers

Location

- Drivers do not stop at stop signs _____
- Drivers do not obey traffic signals _____
- Drivers seem to be speeding _____
- Drivers do not yield to pedestrians, especially at right turns _____
- Drivers do not stop behind the crosswalk _____
- Drivers don't look when leaving or backing out of driveways _____
- Drivers make unexpected turns/maneuvers _____
- Other (**please specify**) _____

Overall rating of driver behavior in walk survey area: Excellent Good Fair Poor



Section E: Safety

Please complete one page for the entire walkable area on your survey map.

Day of week: _____ Time observations began: _____ a.m. p.m.

Date: _____ Time observations ended: _____ a.m. p.m.

DIRECTIONS: Place a ✓ below next to any items that are a problem for walkers and note:

- What might especially be a problem for a child, senior or person with disabilities?
- Note landmarks, streets or sides of streets (north, south, east or west) on the blank line to the right of each item you check.

Problems for walkers

Location

Don't feel safe walking here because:

- Car speeds are too fast
- Too much traffic
- Drivers are distracted (for example, using cell phones)
- There is loitering or suspicious/criminal activity
- Unleashed dogs
- Unclear signs or directions for drivers or pedestrians
- Other **(please specify)**

Overall rating of safety in walk survey area:

Excellent Good Fair Poor



Section F: Comfort and Appeal

Please complete one page for the entire walkable area on your survey map.

Day of week: _____ Time observations began: _____ a.m. p.m.

Date: _____ Time observations ended: _____ a.m. p.m.

DIRECTIONS: Place a ✓ below next to any items that are a problem for walkers and note:

- What might especially be a problem for a child, senior or person with disabilities?
- Note landmarks, streets or sides of streets (north, south, east or west) on the blank line to the right of each item you check.

Problems for walkers

Location

Don't feel safe walking here because:

- Need shade trees
- Need grass, flowers, landscaping
- Need benches and places to rest
- Grass/landscaping needs maintenance
- Need water fountains and bathrooms
- Need sidewalk leading to bus stop
- Bus stop doesn't have shelter
- Bus stop doesn't have adequate lighting
- There is graffiti or vacant/run-down buildings
- There is trash on the route
- Other (**please specify**)

Overall rating of comfort/appeal in walk survey area: Excellent Good Fair Poor



Section G: Overall Ratings and Observations

Now it's time to tally your scores from each observation section. Place a ✓ below next to each rating from the previous sections. If you observed more than one location for Sections B and C, record the average of your observations.

Section

Rating

B: Crossing the Street (Intersections)

Excellent Good Fair Poor

C: Sidewalks

Excellent Good Fair Poor

D: Driver Behavior

Excellent Good Fair Poor

E: Safety

Excellent Good Fair Poor

F: Comfort and Appeal

Excellent Good Fair Poor

Total checkmarks:

Overall rating

Your Overall Rating will be more than just your checkmark total. Think about your observations as a whole. Were some areas much better or worse than others? For example, the sidewalks might be Good for walking, but intersections might be Poor for crossing the street. This might justify reducing the Overall Rating of your walk survey area.

With this in mind:

Overall Rating of the entire walk survey area:

Excellent Good Fair Poor

Additional comments on what works well and what needs improvement:



Sidewalks and Streets Survey

Thank you for participating and making the community more livable for everyone.

Name _____

Address _____

Email _____

Phone _____

Number of participants in this survey activity _____

AARP would like to thank the Institute of Transportation Engineers for providing the original content for this survey.

Now that you've identified the problems, read the next section. It will help you take action to fix the flaws.



Take Action: How to Improve Your Community's Rating From the Sidewalks and Streets Survey

Now that you've identified the problems, you can find the answers. Check out these ideas on ways to improve your community's rating.

<p>1. Did you have room to walk?</p> <ul style="list-style-type: none"> • Sidewalks or paths started and stopped • Sidewalks broken or cracked • Sidewalks blocked • No sidewalks, paths or shoulders • Too much traffic 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Identify another (safer) route and share information with friends and neighbors. • Tell local traffic engineering or public works department about specific problems and provide a copy of the checklist. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • Speak up at board meetings. • Write or petition the city for walkways and gather neighborhood signatures. • Make the local media aware of the problem. • Work with a local transportation engineer to develop a plan for a safe walking route.
<p>2. Was it easy to cross streets?</p> <ul style="list-style-type: none"> • Road too wide • Traffic signals made us wait too long or did not give us enough time to cross • Crosswalks/traffic signals needed • View of traffic blocked by parked cars, trees or plants • Curb cuts were missing or in need of repair 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Pick another route for now. • Tell your local traffic engineering or public works department about the problems and give them a copy of your checklist. • Trim trees or bushes that block the street and ask neighbors to do the same. • Leave nice notes on problem cars asking owners not to park there. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • At city meetings, push for crosswalks, signals, parking changes and curb cuts. • Report to local traffic engineer the locations of parked cars that pose safety hazards. • Report illegally parked cars to the police. • Request that the public works department trim trees or plants. • Make the local media aware of problem.
<p>3. Did drivers behave well?</p> <ul style="list-style-type: none"> • Backed without looking • Did not yield • Turned into walkers' path • Drove too fast • Sped up to make traffic lights or drove through red lights • Stopped too close to crosswalk 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Pick another route for now. • Set an example by slowing down and being considerate of others; encourage your neighbors to do the same. • Report unsafe driving to the police. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • Petition for better law enforcement. • Request protected turns. • Ask city planners and traffic engineers for traffic-calming ideas. • Organize a neighborhood speed-watch program.



<p>4. Was it easy to follow safety rules?</p> <ul style="list-style-type: none"> • Cross at crosswalks or where you could see and be seen? • Stop and look left, right, left again, before crossing? • Walk on sidewalks or shoulders facing traffic? • Cross with the light? 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Educate your community about safe walking. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • Encourage schools to teach walking safety. Help schools start safe-walking programs. • Encourage corporate support for flextime so parents can walk children to school.
<p>5. Was your walk pleasant?</p> <ul style="list-style-type: none"> • Needs grass, flowers, trees • Dogs off leashes • Unsafe people • Not well-lit • Dirty, litter, pollution • Lots of traffic • No resting places 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Point out areas to avoid; agree on safe routes. • Ask neighbors to keep dogs leashed or fenced. • Report unleashed dogs to the animal-control department and to your neighborhood association. • Report unlawful activity to the police. • Report lighting needs to the police or appropriate public works department. • Collect trash during your next walk by taking a trash bag along. • Plant trees and flowers in your yard. • Select an alternative route with less traffic. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • Request increased police enforcement. • Start a crime-watch program in your neighborhood. • Organize a community cleanup day. • Sponsor a neighborhood-beautification day. • Begin an adopt-a-street program.
<p>A quick health check:</p> <ul style="list-style-type: none"> • Could you not go as far or as fast as you wanted? • Were you tired, short of breath or had sore feet or muscles? • Was the sun really hot? • Was it hot and hazy? 	<p>What you can do immediately:</p> <ul style="list-style-type: none"> • Start with short walks and work up to 30 minutes of walking most days. • Invite a friend along. • Walk along shaded routes where possible. • Use sunscreen with an SPF of 15 or higher; wear a hat and sunglasses. • Try not to walk during the hottest time of day. 	<p>What you and your community can do with more time:</p> <ul style="list-style-type: none"> • Get the local media to do a story about the health benefits of walking. • Call the recreation department about community walks. • Encourage corporate support for employee walking programs. • Plant shade trees along routes. • Have a sun-safety seminar. • Learn about unhealthy ozone days and the Air Quality Index (AQI).

AARP would like to thank the Pedestrian and Bicycle Information Center for providing the original content for improving your community’s walkability rating.



Further Steps to Improve Your Community's Rating

City and county bureaucracies can be a challenge to persuade to make changes. You can get the ball rolling by identifying problem areas and calling them to public attention. In the meanwhile, identify alternative routes that can keep you and your community walking, moving and thriving.

- **Rally** your neighbors to work with the appropriate local traffic and transportation officials and with local government to add new walkways and sidewalks and help improve the safety and accessibility of your community.
- **Contact** your local public works and your county department of transportation or elected community representative to report broken, cluttered or otherwise unsafe sidewalks. Give them copies of your survey report and photos that demonstrate the problems.
- **Ask** city or county officials to install pedestrian and traffic signals to mark crosswalks and to add traffic-calming devices (such as speed bumps and traffic circles) to help control the speed of traffic. Make sure the timing of traffic signals is long enough to accommodate older pedestrians, people with disabilities and other slower-moving pedestrians.
- **Organize** a neighborhood watch group to prevent crime from taking place in your community. More awareness of activity in the neighborhood can reduce crime so your community can have safer streets that everyone can enjoy.
- **Advocate** for raised medians with curb cuts to easily accommodate all pedestrians and wheelchair users.

So Just Who Are the Players Who Can Help You Make a Difference?

City or County Public Works or Department of Transportation:

- Your public works agency can address concerns about placement and width of sidewalks and sidewalk maintenance. Responsibility for specific sidewalk issues may vary. For example, even though the city public works department often addresses sidewalk maintenance, the maintenance may actually be the responsibility of property owners. Adding a new walkway may require negotiating with the respective property owners about paying for it. This process is easier if a gap can be filled in, as opposed to installing a completely new walkway that crosses a number of private properties.



- Trimming bushes that overhang the sidewalk is the property owners' responsibility, but the city or county will send an official notice to request that property owners take care of it. If a property owner does not comply, a public works crew may trim the bushes and bill the property owner. In some neighborhoods, the homeowners' association is responsible for sidewalks.
- Some communities or neighborhoods have ordinances restricting installation of sidewalks or curbs for aesthetic reasons or to make the area appear to be less urban. In these communities, you must present the need for sidewalks to the city or county council, and it can be quite challenging. Consider directing your energies more effectively toward ensuring that neighborhood streets are well-maintained.
- If action on sidewalks is not possible, your group can still help make it safer to walk along the streets by urging that the city install traffic-calming measures such as roundabouts, speed tables or speed humps to reduce cut-through traffic or speeding cars. You can also organize a neighborhood watch group to deal with any criminal activity in your community. More awareness of activity in your neighborhood can reduce crime, which means the streets are safer for everyone to enjoy.

Other Community Partners:

- Contact your local public works department or elected community representative to report broken, cluttered or otherwise unsafe sidewalks. Consider forming an alliance with downtown merchants or others who may be interested in advocating for more effective streetlights, benches and shade trees to improve your community's appeal. Contact the planning department, which would be involved in improving streetscapes, or the parks department, which might be involved in planting trees. Local parent-teacher associations (PTAs) may also be interested in ensuring safe school routes.
- The traffic manager in the city or county department of transportation is responsible for controlling the speed of traffic through traffic signals. Make sure the timing of traffic signals is long enough to accommodate older pedestrians, people with disabilities and other slow-moving pedestrians.
- Signalized crosswalks with flashing lights or special signals activated by a walk sign are safest because they help reduce the number of pedestrians stranded at crosswalks when the light changes. New types of crosswalks that feature a striped path that lights up when activated by a pedestrian demonstrate the potential of technology to enhance pedestrian safety. Older residents particularly benefit from these types of improvements at major street crossings.



Resources

Pedestrian Mobility and Safety – Audit Guide (<http://ite.org/PedAudits>)

This guide, written by AARP and the Institute of Transportation Engineers, explains the numerous issues related to pedestrian safety and mobility. It includes photos of what to look for and findings from surveys in four cities.

Pedestrian and Bicycle Information Center (<http://www.walkinginfo.org>)

Information includes walking basics, solutions and resources.

Walk Wise, Drive Smart (<http://www.walk-wise.org>)

Learn from the experience of Hendersonville, NC, which is building community support to create pedestrian-friendly environments for older adults.

Step Up to Better Health (<http://aarp.stepuptobetterhealth.com>)

This AARP program offers a fun and easy way to fit walking into your daily routine.

Get Fit on Route 66 (<http://aarp.getfitonroute66.com>)

Convert your physical activity minutes to miles as you take a virtual journey down this legendary highway.

Staying Motivated (<http://www.aarp.org/health/fitness>)

Many articles about walking to help you stay the course and keep walking

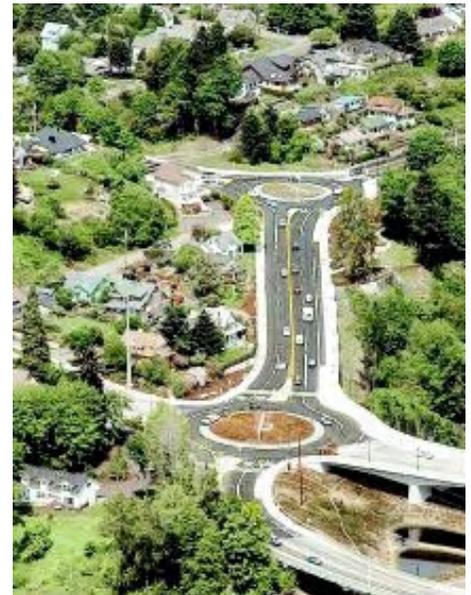
BEST PRACTICES FOR A BETTER BUILT FORM FROM THE WALC
INSTITUTE



How to Do It: Traffic-Calming Roundabouts



A very successful roundabout in Brighton, Michigan handles 21,000 vehicles per day. Roundabouts facilitate through-traffic and turning movements without requiring signal control. Roundabouts are made up of a circulating roadway with an island that is often used for landscaping or other decorative features. The circulating roadway is typically wider than the approach roadways and features an additional ‘apron’ against the edges of the island; both of these features allow for fire trucks, ambulances and other large vehicles. Roundabouts increase intersection volume by up to 30 percent. As the only requirement for yielding the right-of-way is to traffic already in the circulating roadway, vehicles can continue moving through intersections carrying a light volume, requiring no queue at the approach roadways and potentially allowing all intersecting streets to use the intersection at once. Due to their low speed (15-20 mph in and out, roundabouts also reduce personal injury crashes by 80 to 90 percent. Roundabouts reduce delay, which reduces idling engines, air pollution, noise and lost time. Roundabouts provide safer and more comfortable pedestrian crossings. Splitter islands serve as a pedestrian refuge. Allowing one car length between the crossing and circulating lane(s) optimizes roundabout efficiency for vehicles. Roundabouts reduce conflicts in multiple ways: when crossing, pedestrians face only one potential conflict (traffic either entering or exiting the roundabout, divided by the splitter island), and not the six conflicts per crossing leg in full-crossing intersections. In properly designed roundabouts, all conflicts are at low speeds for both entering and exiting traffic (15-22 mph). Roundabouts also create the least delay to pedestrians wishing to cross a street. Instead of waiting for up to two minutes to cross (common with a signal), the pedestrian reaching a roundabout rarely has more than a 2-8 second delay for each leg that they cross. Most bicyclists circulate with traffic (since it is now going their speed).





By helping re-scale a roadway, roundabouts help set the stage for more successful retail trade and social life. The roundabout below transformed an ugly strip street in Golden, Colorado, into a much better proportioned street. Four roundabouts were built; all signals were removed. One surprising result: retail trade in the corridor outperformed all other streets in Colorado during the last recession.

Top photo, Holland, Michigan. Bottom photo, Orlando, Florida. Both mini-circles manage traffic quietly, maximize on street parking by bringing speeds down, and offer attractive corners in the commercial districts they occupy. A mini-circle or two on key streets on gateway approaches to town, in downtowns and other locations will add charm, beauty and movement. Mini-circles are low cost and attractive traffic management tools that can be easily designed and installed. Although costs can be as low as \$15-25k, much more attractive circles are recommended for a number of historic roads where speeds are too high. A cost range of \$75-125k would be appropriate for central locations, while modest price circles can be used elsewhere in the community. Mini-circles reduce the potential for crashes by 90%. Yield controls are used on all approaches. Seattle, Washington has placed over 1,000 mini-circles.



Roundabouts with Right-Turn Bypass Lanes

The addition of street network and roundabouts help to keep traffic flowing, but keep it flowing slowly, which creates a better environment for pedestrians and cyclists. In some areas, roundabouts should have right-turn bypass lanes, as illustrated below. The top images are of a roundabout in Boulder, CO and the bottom image is of a roundabout leading to the Charlottesville, VA airport.



Success Story: Roundabouts and Crossings

Communities can draw inspiration from Bradenton Beach, Florida, where this state road previously exposed pedestrians to high speeds at this crossing. On average, one pedestrian was killed each year. Walking for exercise, pleasure or transportation was suppressed. Following the construction of the roundabout, all crashes disappeared, and a new stage was set for mixed use development. After fourteen years of operation, there had been no reported crashes of any type. New economic life has set a mood of prosperity to the entire shopping district. Today, there is an abundance of pedestrian life.



How to Do It: Crossings

Principles: Crossings should be well placed, located where there is a strong desire to cross, where sight distances are good, where speeds are low. Shown on these pages, the use of materials to create attractive streetscape features add beauty, function and place. Each functional part (i.e. parking, crossings, curb extensions, lane narrowing) should be designed to add to the charm, aesthetics, character and integrity of the street. Following European examples, virtually all street traffic operation signs can be removed, once the street “reads” correctly, that speeds are to be low, courtesies toward people high.





This Golden, Colorado crossing makes use of several important principles, the street is narrowed (to sixteen feet of asphalt, with another 2 feet in each valley gutter). Growth of ground cover (keep trimmed to 20-28 inches) and tall vertical trees, in time, will complete this crossing. This road was once 40 feet wide. Today parents feel comfortable having their children make crossings along a popular park and trail.



Use high-emphasis markings. A new approach is being used with paving ground down about 1/3rd of an inch. A hot ceramic mix is poured in, then reflective glass beads are settled on top. This anti-slip design is expected to wear well and outlast the life of the road surface. If desired, crossings can also be raised. This raised table has a 1:16 gradient change.

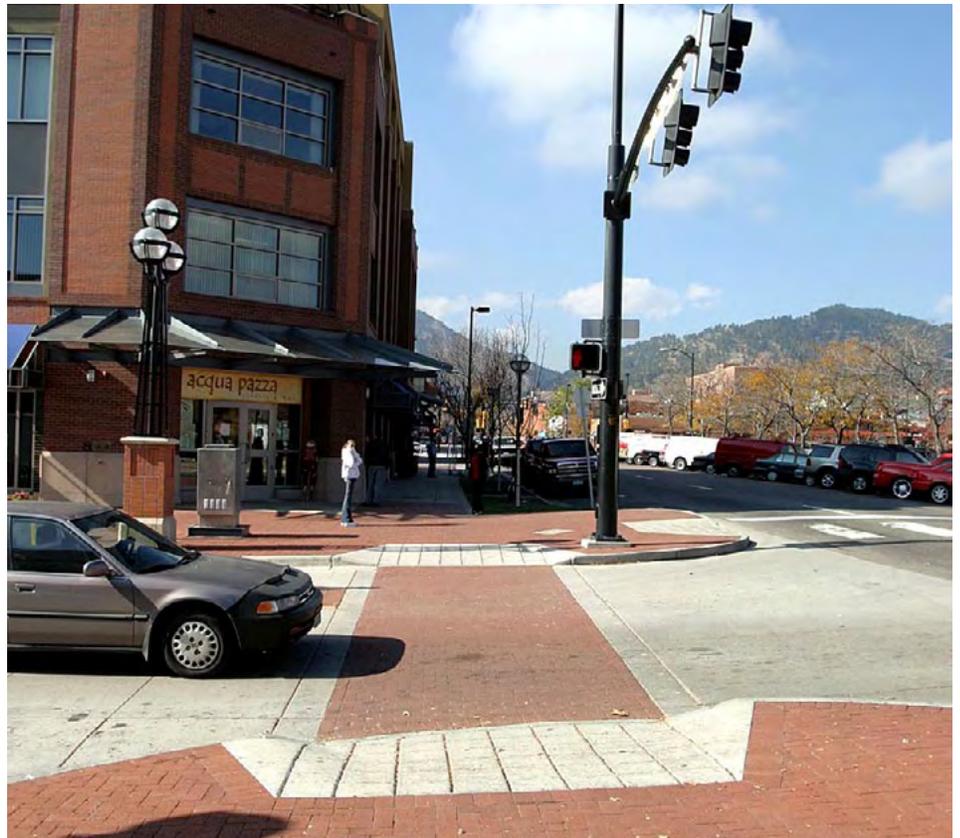


Tools used to slow traffic and help people cross streets.

If space exists where some crossings will be warranted, then a median island can be added. This is a former four-lane road, in Olympia, Washington. With medians pedestrians are only exposed to one direction of moving traffic at a time. Medians should have both ground cover and trees to make them more noticeable to motorists from greater distances. Use of these features slows speed, then draws attention to the crossing.

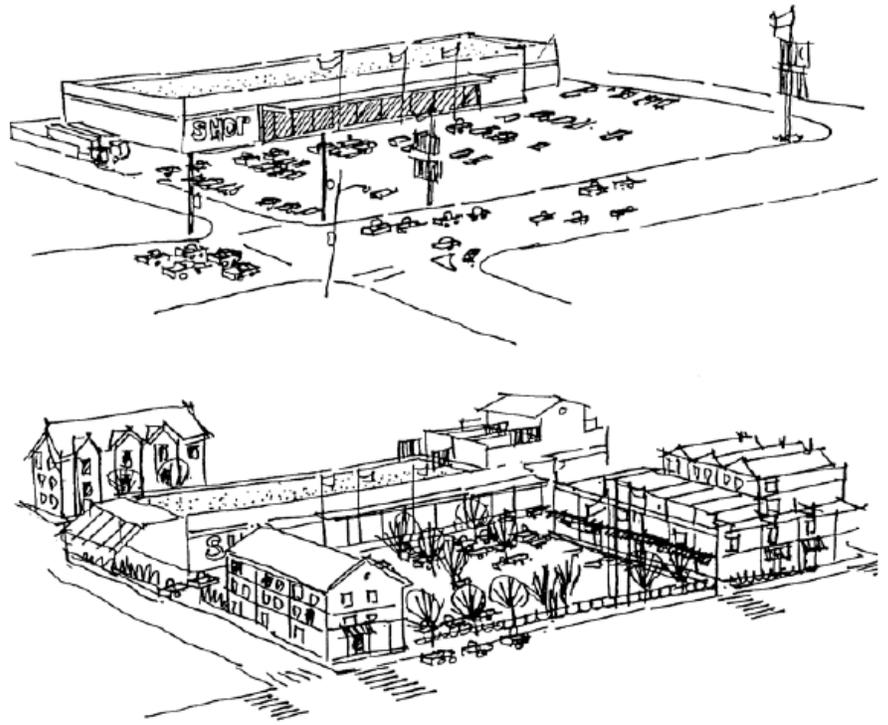


Additional tools can be used to aid pedestrians in crossing streets safely. Curb extensions reduce crossing distances. Landscaping helps channel pedestrians to ramps. Using two ramps per corner simplifies crossings. Color contrast is an aid for older pedestrians and pedestrians with visual problems. Count down timers are now recommended as a soft replacement for all urban area signalized crossings.



How to Do It: Convert Suburban Strips to Village Centers

The conversion of a strip to a village center starts with taking critical corners and placing urban buildings there. These new buildings help size and shape the importance of the corner and the corridor. In time, well placed buildings are joined together to create vertical walls that provide character and community. This works in small scale hamlets to larger scale shopping districts. Illustrations here show how the new visual qualities help dampen traffic speeds. Buildings start the critical process of “enclosing” streets, giving them a feel of “place” and importance. The two photos below illustrate the importance of architecture and town form in controlling the speed of roadways. There is little more than engineers can do in the bottom image to control speed. Meanwhile, careful, thoughtful, placement of buildings and placemaking brings speeds, and therefore development opportunities alive.



Shown to the right is a correctly assembled urban block, and below it a conventional suburban block. Note how the suburban strip image is unappealing for walking (or even driving), and hastens motorists through a space. This increases the potential for speeding. Thus, poorly designed buildings and block patterns impact business life and people multiple ways.



Correctly designed and placed urban form is necessary to help heal downtowns or other places where people are to spend time and money. Unless code calls for an urban form, do not expect such development. It costs more, but it produces more. Urban mixed-use development typically yields \$25-60/square foot, while single-use commercial zoning built to suburban models yields only \$5-15/square foot.



Suburban influences in town centers can be replaced over time. A partnership between private and public land holders can result in scenes that look much like these, and even better.

Public streets form and frame so much of our public realm that by emphasizing speed of cars, we destroy character and sense of community. Once streets are rebuilt for lower, but steady, speeds, it is possible to provide new, mixed use buildings that create a sense of place, character and arrival.

As these transitions occur land can increase in value from \$5-15/sq ft to \$35-60/ sq ft. Scene to the right: In time either the entire mall can be replaced, or a portion in the middle can be taken down to create an attractive pathway that invites a direct route to street shops.

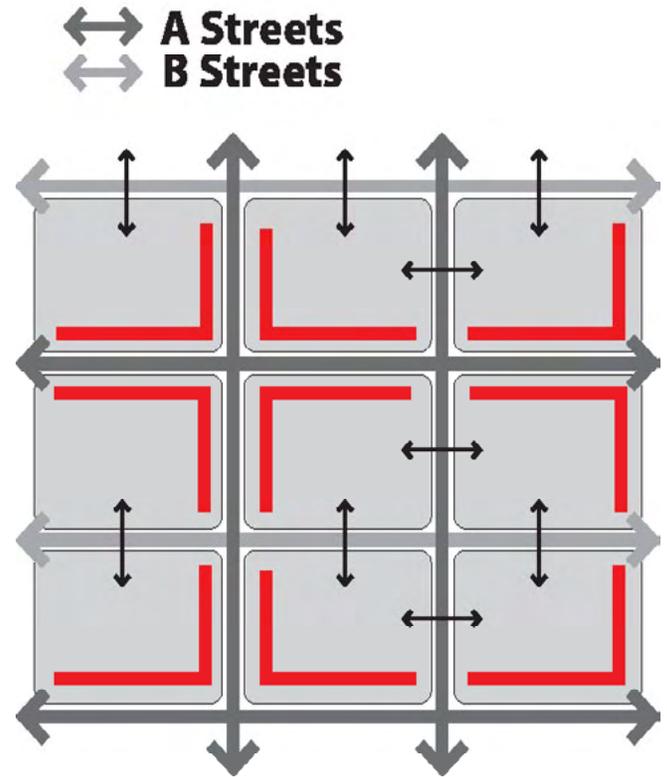


How to Do It: From Placeless to Place, Convert “B” Streets to “A”

The illustration to the right emphasizes those streets (outlined in red) that are “A” Streets. “B” Streets in the illustration are not highlighted with red. These can be alleys, or any type of a utility street.

In the two photos at the bottom of the page, it is clear that two developers were involved. To the right, the developer privatized the neighborhood. Even though the developer was required to install sidewalks, the wall (“B” treatment) assures that no one will walk here. In contrast, across the street, another developer “honored the street” by placing “eyes” to the street. In this case the street is being treated as an “A” street. Town codes must stress that if people are to walk to destinations, a series of “A” streets must be created, and developers cannot put back yards to these important streets.

Of course, it is more complicated than that. If the city, or state wants to use the collector as a higher speed conduit, void of trees and other place, developers will find it hard to sell homes along the street. The street is the core tool for creating successful neighborhoods, security and a desire to walk.



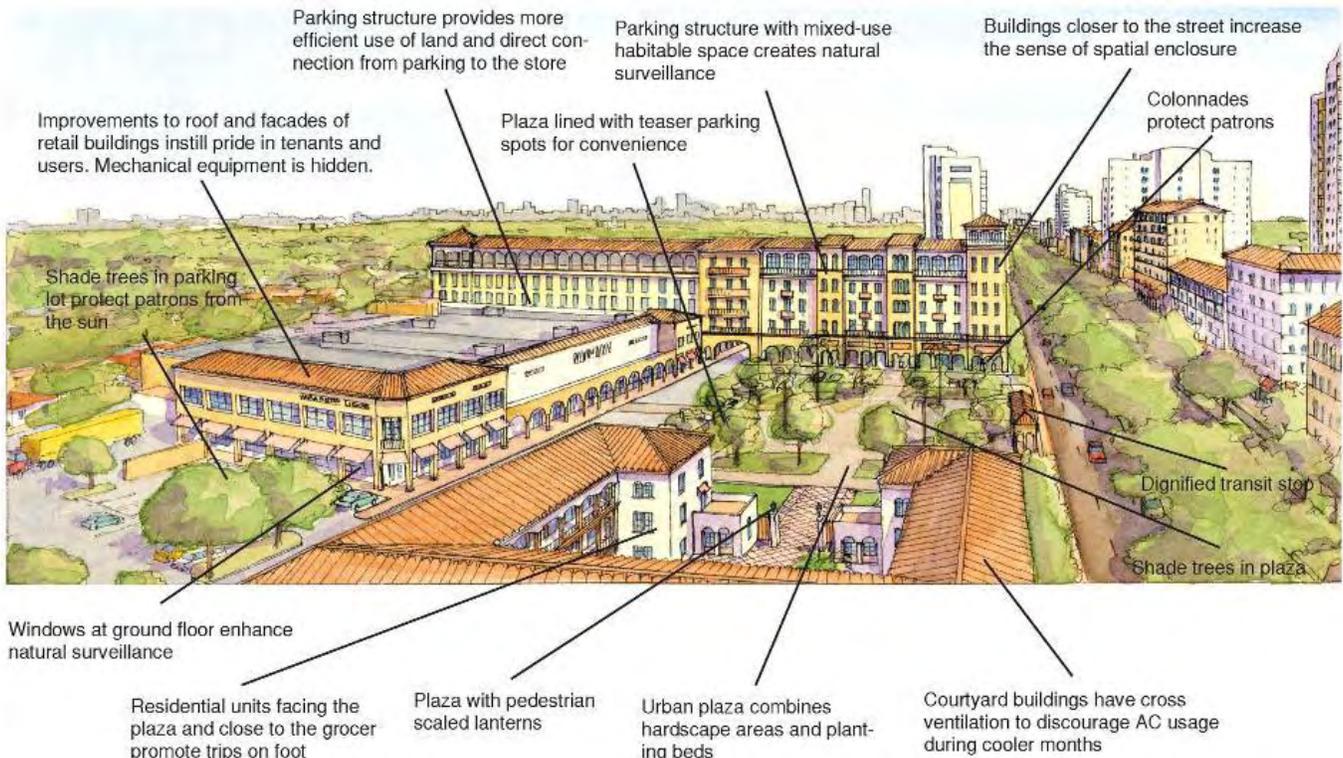


In the photograph above, the functional use of a street is defined. Places where people want to walk are "A" streets (where buildings are designed to watch over the street). Meanwhile a series of "B" streets are needed to provide for utilities, deliveries and other internal functions. For the most part, people will not walk along "B" corridors.

Meanwhile, the above "B" street performs quite well for people who live here or make deliveries here. In the next row of images, a street not designed for walking (middle left) can be transformed into an "A" street which watches over parks, schools or corridors where continuous walking trips are important.



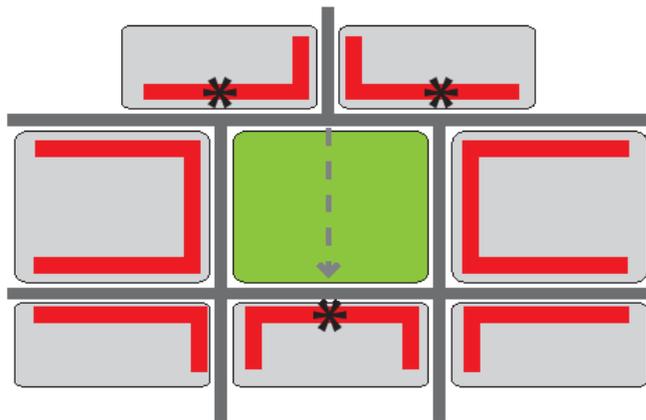
Right and above photos: This suburban style "B" street is transformed into the image below, changing the function of the street into an "A" category. In recent years, teams of planners, engineers, architects and landscape architects have made transitions allowing areas to become alive and active. It often takes more than one discipline to do this. Indeed, those areas that do not transform well are areas where people do not understand multiple functions needed in corridors.



Optimizing Your View and Increasing Social Interaction and Social Equity

When terminating views guide the human eye down a street, several important things happen. The iconic building, mountain or lake vista provides an attraction that draws the person toward the destination, just as an anchor store does in a mall. The terminal point also reduces the tendency to speed, since motorists realize their journey will be interrupted. The terminating vista also acts as a navigational aid.

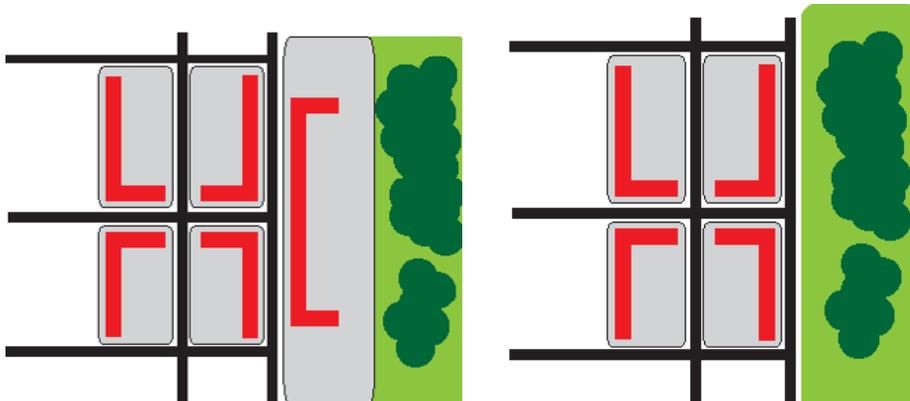
To maximize the value of land, the destination property (park, lake, plaza) should have a well designed, quiet and attractive street running parallel to it. The more sides that have access, the more valuable the land becomes. Other streets need to lead up to this perimeter street and connect with it. In some cases, a well designed trail acts as the “street” enabling people to walk or bicycle comfortably along the water’s edge. In no case should a stream, river, lake, park or even school yard feel privatized through absence of access.

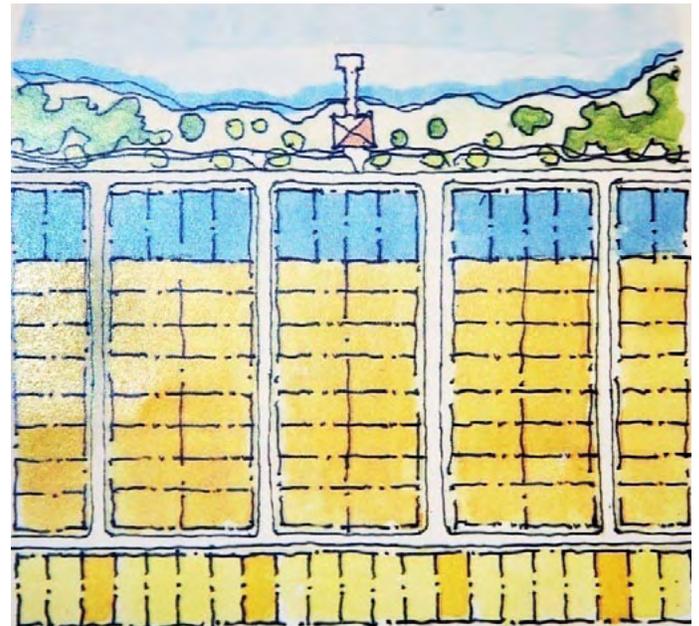
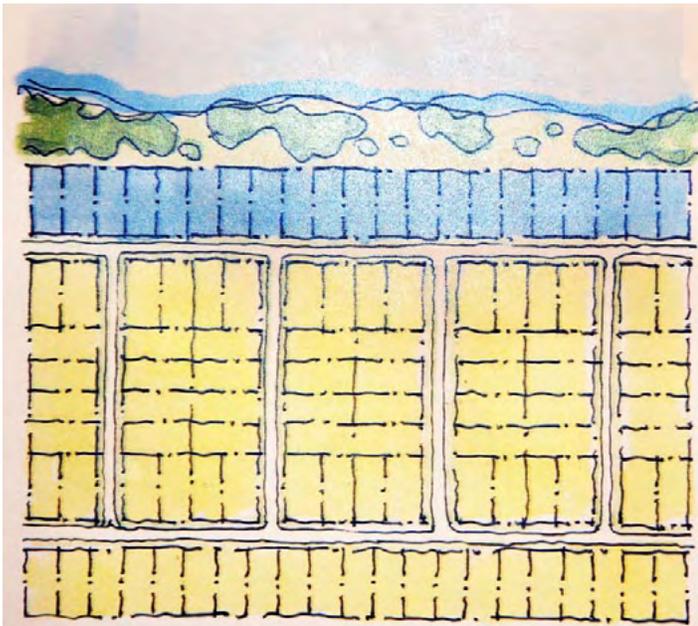


In these illustrations, the red lines represent the edges of adjacent properties that have access to the amenity.

On top, connected streets provide the highest access to the amenity, support social exchange, reduce crime rates, and increase land values.

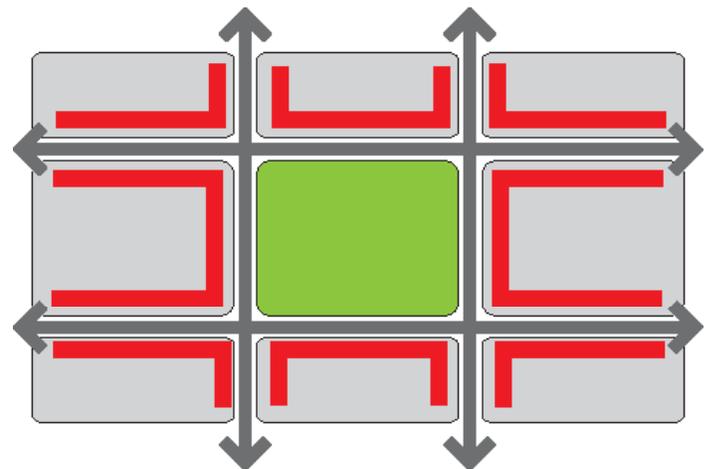
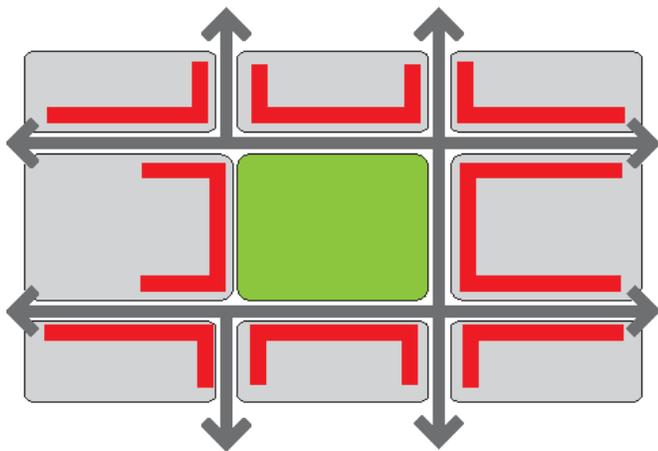
Below, disconnected streets privatize the amenity, decrease walking, and increase potential for property and personal crime.





Privatized -- Wrong Way. The above layout of streets privatizes the lake. Although homes along the shoreline may hold a 10% higher sale and resale value, the amenity, which should belong to the entire community, is now inaccessible to others. Even if a small beach front is accessible at some point, the overall value of homes going 2 to 10 blocks deep are devalued. The developer makes less money on total property values, and the community suffers from reduced social interaction.

Public Access -- Right Way. This alternative design maximizes access to the neighborhood feature (lake, park, school). As access is increased, the number of walking and bicycling trips increase, there is less need for expensive and environmentally damaging parking lots, and the development community makes a greater return on investment. In the scene to the left, the project may not “pencil out” once all associated utilities, street and other costs are worked out. With higher values, the project is more likely to be viable.



Wrong Way. Streets do not connect on the left hand side. The above layout of streets breaks street connectivity and privatizes the park. This reduces access to the park. In a small park, this gives the park user the feeling that they are in someone’s yard. Since the property often has its back to the park, it reduces the “eyes” on the park and creates an increasing risk that the park will not be used fully. Reduced park use, in turn, invites crime in the park and to adjacent property owners. Low park use also reduces property values.

Right Way. This design maximizes connectivity and access to the park, square or plaza. By placing more activity along the park (walking, bicycling and driving) the park becomes more interactive and better used. Ideally, all streets surrounding the park will have either parallel or angled parking, thus minimizing the amount of park land that must be devoted to parking. This also lightens the environmental damage, since on-street parking takes up only 1/3rd the amount of space as off-street parking.

How to Do It: Complete Streets

Major streets with moderate to high volumes of traffic should be transformed into “Complete Streets.” Bike lanes, bike trails, sidewalks, streetscaping, curb extensions, mid-block crossings and other tools are applied.

Traffic calming and traffic management techniques should be used. On-street parking can be striped, and curb extensions, tree wells and medians can be added. Such improvements not only bring down speeds, they improve town centers and connect streets by reducing noise and perceived danger.

Most principal streets should have lanes narrower than today, especially when combined with bike lanes. Bike lanes add a buffer to parking and sidewalks.

Sidewalk construction and maintenance should be a priority, especially within a quarter-mile or half-mile of town centers and schools.

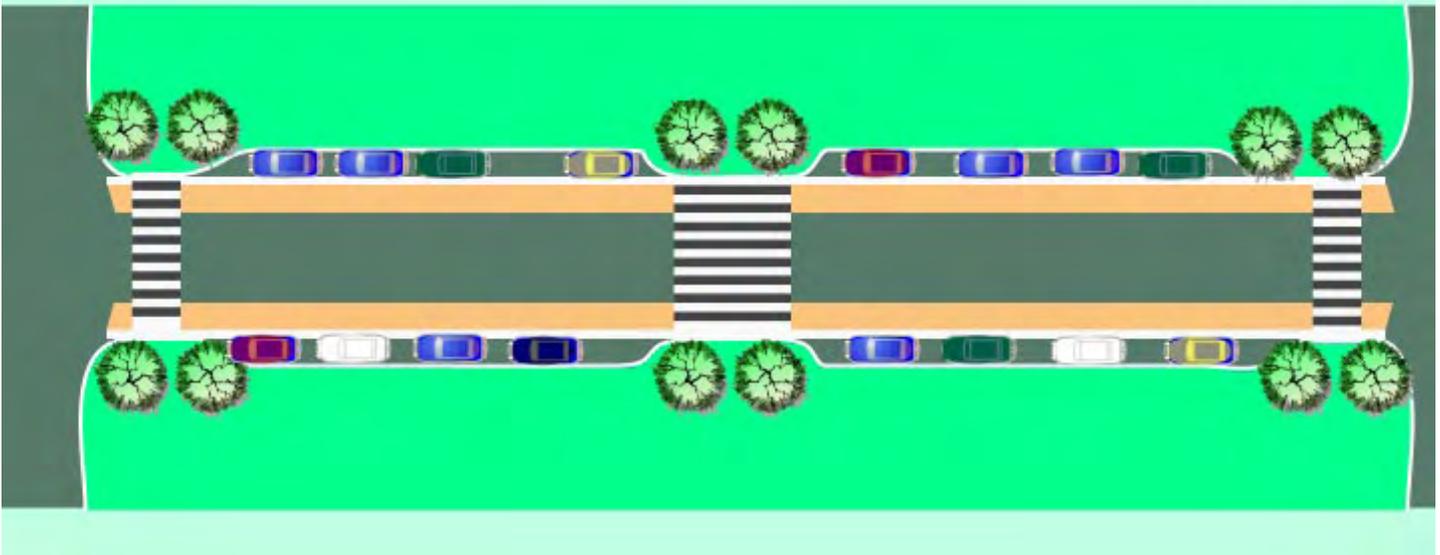
Ramps should comply with the Americans with Disabilities Act and “universal design” standards.



Above and below: Example of a two-lane road with a median, inset parking, one ten foot wide lane in each direction and bike lanes. A roadway based on these concepts can move up to 20,000 ADT (if used with roundabouts at key intersections). If roundabouts are not used, more lanes are added at intersections for storage and turns at key intersections -- not the entire section.

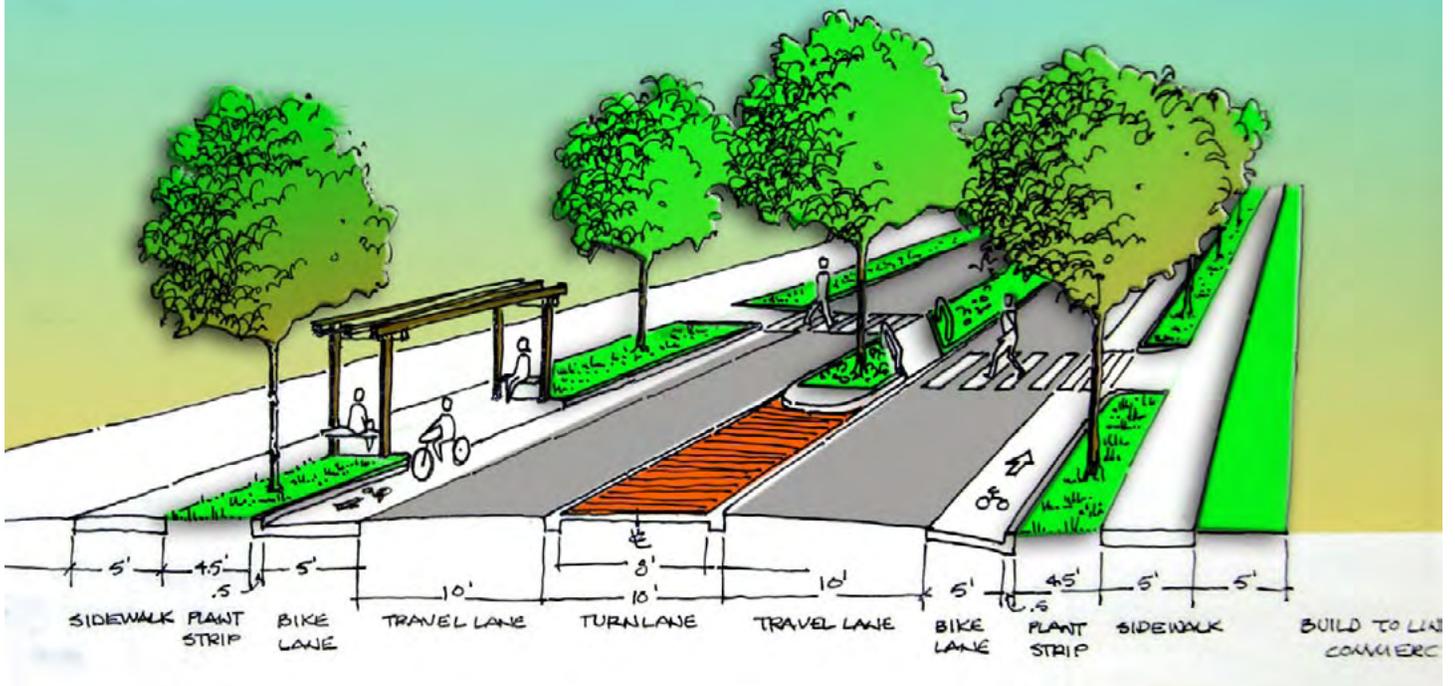
(Photo: Issaquah Highlands, Issaquah, Washington)





Complete Streets vary in design based on the type of street involved, speed and volume, block form, whether parking is needed or not, climate, demographics and other factors. These sections illustrate a number of desired features, including support for walking and bicycling along streets, and the ability to cross over. Trees are generally spaced each 15 to 30 feet. Minimum dimensions for an environmentally friendly street are provided in the bottom illustration. A center turn storage lane of ten feet, two travel lanes of ten feet each, two five foot bike lanes (using an extended gutter pan that is saw cut for joints), two planter strips of 5 feet each and two sidewalks of five feet each can fit inside a 60 foot right-of-way.

TYPICAL SECTION



How to Do It: Road Diets

WHO

Typically implemented by city, county or state transportation agencies, road diets help achieve the policies advocated for by Complete Streets (www.completestreets.org), Smart Growth America (www.smartgrowthamerica.org), and many other national, state and local groups seeking a safer, more walkable and livable community for road users of all ages and abilities.

WHAT

A road diet involves eliminating travel lanes on a roadway to improve safety for pedestrians and bicyclists. While there can be more than four travel lanes before treatment, road diets are generally conversions of four-lane, undivided roads into three lanes—two through lanes plus a center turn lane or median island. The fourth lane may be converted into a bicycle lane, sidewalk, planter strip for street trees, a bus stop, a separated multi-use trail, a wider outside lane and/or for on-street parking. Rural areas might add wider shoulders for bicyclists, roundabouts near a town – especially as a gateway treatment - or separated multi-use trails. In other words, based on the surrounding land use and travel speeds or context of the road, the street cross section is reallocated.

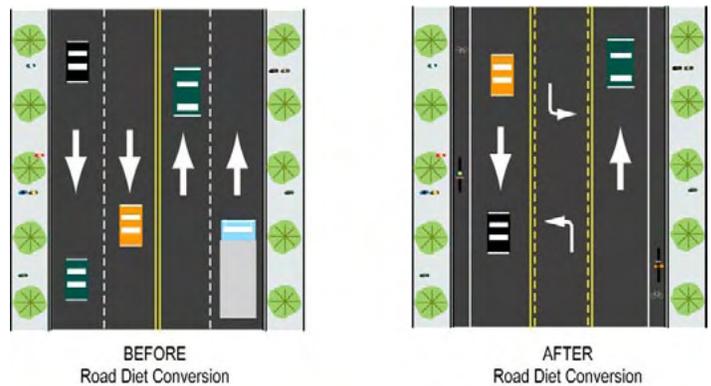
WHERE

Lane and Road Diets can be successfully implemented on collector and arterial streets, main streets, commercial corridors, or town centers; on any street that is over-designed to give priority to the motor vehicle; and in areas where there is greater need to provide for multi-modal travel.

WHEN

Context is the key to a successful lane or road diet, Complete Streets, and Smart Growth. The objective of any design change should be to match the roadway environment with the actual roadway function.

Candidate roads will usually have an ADT (Average Daily Trips) of less than 20,000 to ensure minimal effects on vehicle capacity, although successful road diets have been performed with volumes reaching 30,000 ADT and the roadway did not reach the most congested condition of LOS F (a level-of-service failing grade.) Ideal roads are in need of mitigation to reduce traffic conflict, crashes, and to slow down vehicles, and are in



areas that wish to encourage economic development, address parking circulation, improve streetscapes, and create safer roads.

WHY

The benefits of road diets are numerous: they improve road safety for users of all ages and abilities, whether they travel by foot, wheelchair, bicycle, stroller, or motor vehicle; create a welcoming community environment; and help to solve some of our more pressing public health issues such as reducing obesity, and rates of heart disease, diabetes, and high blood pressure by encouraging active living. Other benefits can include: economic development, increased property values, improved streetscape, better parking circulation, reduced vehicle speeds, improved mobility and more efficient land uses - mixed uses that offer affordable housing, retail, restaurant, and/or office options.

Anecdotal case study results support the conclusion that pedestrians, bicyclists, and adjacent landowners typically prefer the corridor environment of a road diet, especially a two-lane cross section with median islands. When people are the priority, a true livable community and sense of place exist.



Many American towns have the potential to go from having too many lanes for storing cars, to fewer lanes which then build place and the local economy. After the 1989 Loma Prieta earthquake, Pacific Ave. in Santa Cruz, CA was rebuilt to the scene below. Now with narrower street widths and a sense of place, the street teems with life and vitality and generates revenue.



HOW

Conduct a traffic study, and before/after traffic counts of all road users; understand the limitations of traffic modeling; consider special bus designs such as bus pull-outs. Engage the community, educating residents and local leaders on why lane/road diets are a good idea. Survey affected merchants and residents along the corridor to learn what the expectations and objections of a road diet might be. Garner local political support from elected leaders, leverage financial resources from various sources. Funding for road diets can often come from economic development programs, state and local transportation departments, regional metropolitan transportation planning organizations, state and county health departments, main street programs, tree planting or green-up programs. There are many funding sources that can be explored to create significant change.

How to Do It: Parking

The retail life of a town center is supported best by having sufficient on-street parking. Many towns fail to use their streets wisely. They induce speeding by having too much space for vehicular flow, and not enough for car storage.

On-street parking only takes one third as much land as off street parking. On-street parking belongs on center city streets, serving as a buffer to moving cars and a natural traffic calming tool. When used in conjunction with curb extensions (bump outs) and tree wells, parking is said to be inset, narrowing streets, making pedestrian crossings easier, more comfortable and safe.

In time, to achieve compact town center form, where more people can live and help activate the town center, it will be necessary to move away from most off-street parking. Once a full and vibrant retail life is achieved, each parking space becomes worth \$200,000 per year. Thus, attention to using town center streets to maximize convenient parking, is urgent and paramount.

If head-out angled parking is used (highly recommended) the entire curb to curb dimension can be 54-56'. When head-out angled parking is used, lane widths can be much narrower, since back out “discovery time” is not needed. Also, the back end of vehicles have more overhang, so less space is used.

Parking bay depths should be 15 feet. An added two foot of space is picked up when valley gutters are used (highly recommended). See valley gutter in photos.

Keep travel lanes to a combined width of 20-22 feet. A center line is not used. This tight driving space helps keep speeds low, which reduces the chance of vehicle crashes.



Head-Out Angled Parking

There are multiple benefits to head-out angled parking. It is the safest way to park a vehicle and it increases the “yield” of how much on-street parking can be used (from 30 to 110 percent).

Head-out angled parking maximizes use of adjacent land, since off-street parking takes up three times as much space as on-street. It also takes up less road space (adjacent lanes can be 11 feet wide).

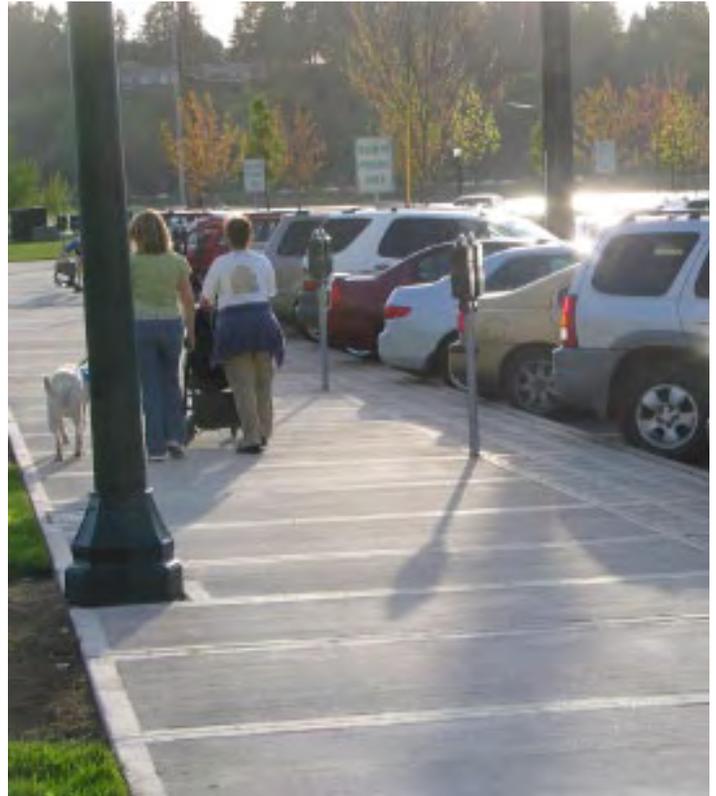
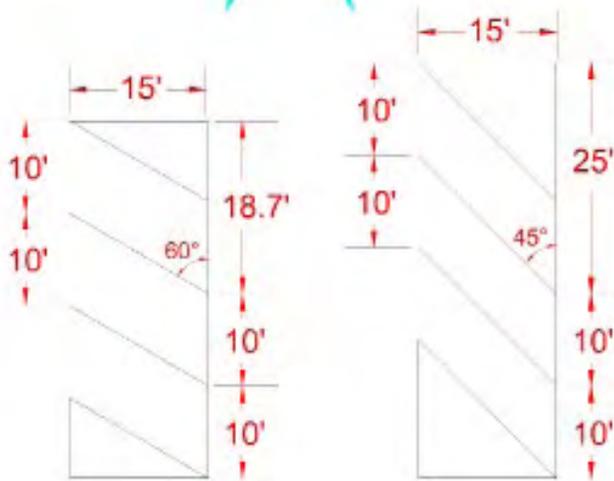
It also is easier to do than parallel parking. It places the trunk where it is safe to access, and when car doors open, passengers are directed toward the sidewalk, which is especially helpful if they are young children.

Keep sidewalks wide and comfortable. Head-out parking allows cars to overhang more than front-in angled parking, so set all fixtures (lamps, hydrants, signs, trees) 24 to 30 inches from the edge of curb.



With front-in angled parking many communities max out their parking gain by using 60 degrees. With head-out angled parking (also called “back-in angled parking), the “yield” is reduced when a 45-degree angle is used. Either angle is possible, but with head-out, 45 degrees is more common, since it is easier to park. It is generally recommended that parking bays be no more than fifteen feet deep (perpendicular measurement). With a two-foot-wide valley gutter, bringing the full depth to 17 feet, all conventional and many oversized vehicles fit in this space. Omit center lane lines when using on street parking to allow motorists to go around a car in the process of parking when there is no opposing traffic. Removal of center lane lines has been shown to reduce traffic speeds and crashes.

45 degree Back In angle Parking (BIAP) will always be 6.3 feet longer than 60 degree BIAP



How to Do It: Tree Wells



Sometimes a building-to-building right-of-way is too tight to plant trees in sidewalk areas. Use of in-street tree wells can allow the street to be “greened” and often without removal of parking. Tree wells can either be installed to allow water to flow naturally in existing channels, or, if a complete reconstruction is needed, to insert drainage in a pattern that supports these green innovations. Tree wells are used on many local streets, but can also be used, along with curb extensions on roads like SR 70 and SR 17, in Florida. A number of state roads apply tree wells in a variety of states and provinces (including snow country, such as Boise, Idaho and Columbus, Ohio) in urban areas. Use of tree wells and curb extensions, in combination, help bring speeds to more appropriate urban levels.

How to Do It: Paseos and Plazas that Create a Sense of Place

Placemaking: The transforming of a street, sidewalk, plaza, square, paseo, open lot, waterfront or other space to be attractive, rewarding and a community source of distinction and pride. Good places make good experiences possible and have consequences in our lives. People want to share experiences and ideas on common ground, in attractive, well designed and cared for public places.

Principles: Reinvestment in streets, between buildings, and in other well located public spaces brings added value to all buildings and homes in a town center. A front porch storing last decades sofa and washing machine detracts. Placemaking, like interior decorating, must create a strong, compelling sense of place that makes time spent in these spaces rewarding and memorable. Consider the public and private realm of a town center as a public/private partnership. Consider the greater town center as a canvas waiting for rich, vibrant tones, textures and colors that honor existing or adapted buildings and streets. Nothing should be ho-hum. Places can be funky and relaxed, but they must be thoughtful, sensitive to place, and cared for.

Streetscapes help create character and charm. In many towns, many decades of deterioration must be attended to. The town center is a fine home for things waiting to happen, but many existing furnishings, old facades, litter cans, upheaved sidewalks, detract.

The waiting plaza space shown in the upper corner is truly the opportunity that can be the “tipping point” to all other investments.

Plaza spaces must be carefully crafted to bring about proper levels of enclosure, transparency, human scale, complexity, “imageability” and comfort.

Even small public spaces need a minimum of ten different treats or activities or points of interest for the public to become fully engaged. Don’t overlook the needs of seniors, and the drawing power of children to come to these places.



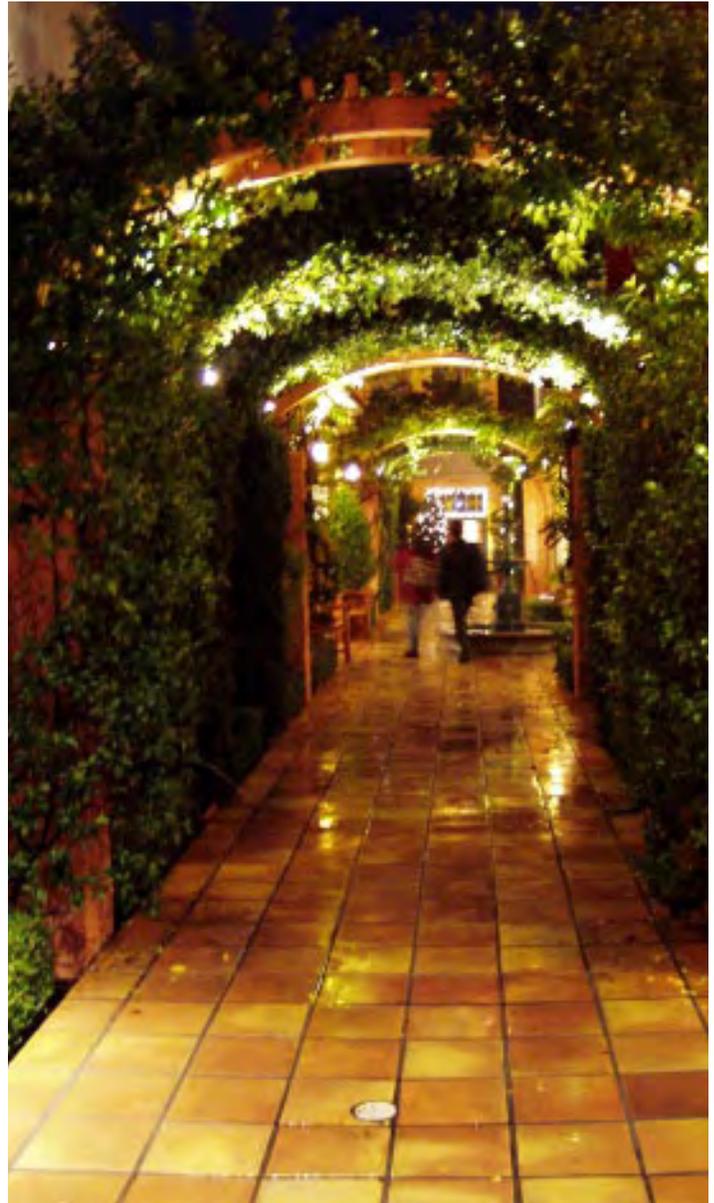
Not ready for prime time: Above is an example of a physical space that can become an important plaza, outdoor room and connector.

Below: Adapted into public space.



Placemaking includes outdoor “rooms.”

Just as with a home environment, cities have the opportunity to draw in visitors and residents to special “rooms” created for social exchange or instead a chance to relax, read, or simply hang out. These are examples of paseos and other spaces between buildings that take on a unique life. Common to all, plenty of design, “eyes on the realm” and comfort.



How to Do It: Sidewalks

Principles: Sidewalks in a town center require high levels of design and care. It is within the protected spaces of a sidewalk where people move freely, but also spend time engaging others and spending time to enjoy the beauty of their public space. Sidewalks work best when they are fully buffered from moving traffic. The following considerations should be provided when laying out sidewalks.

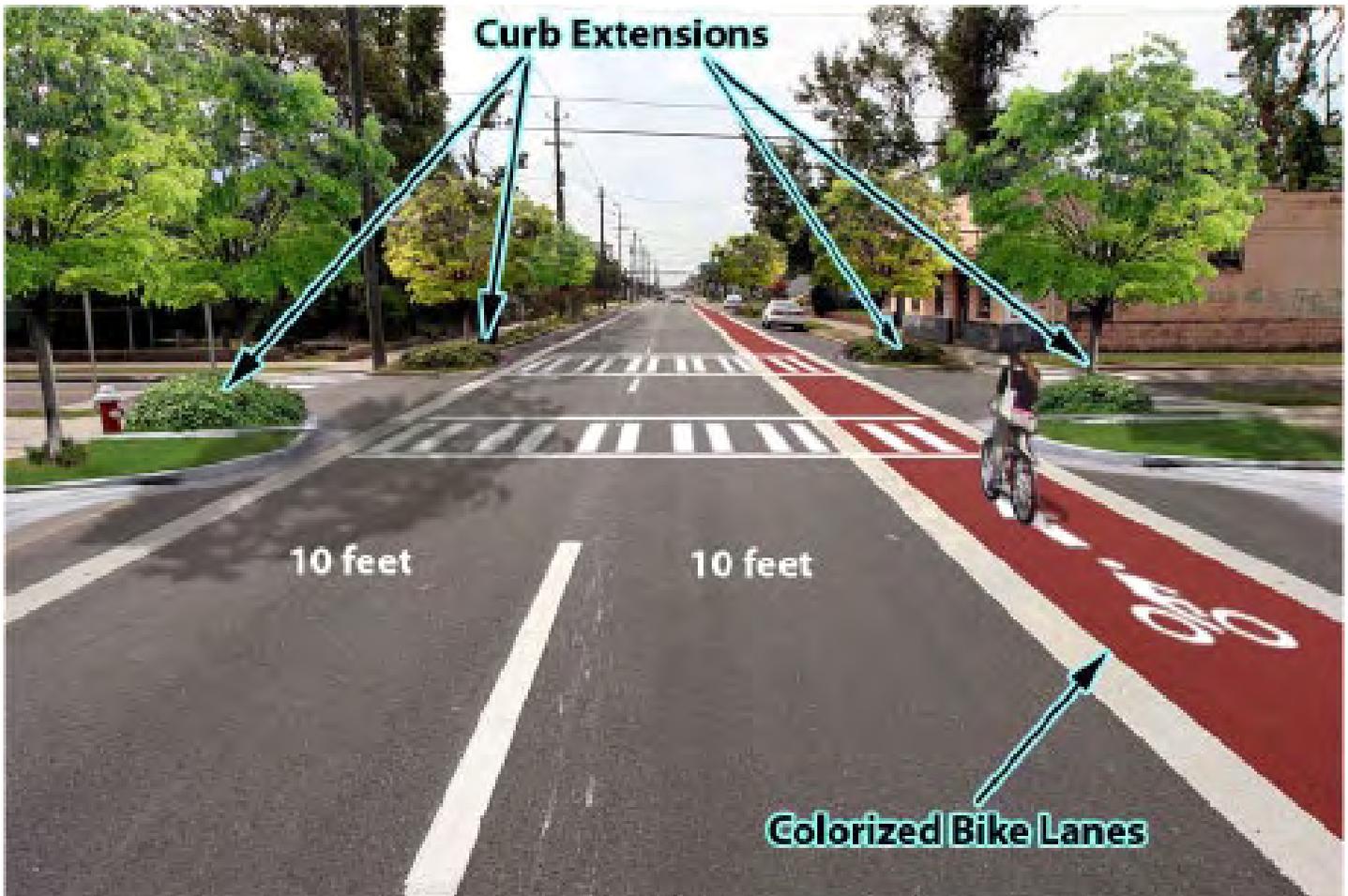
Use color, texture, street furniture and other materials to distinguish functional areas of walkways. Sidewalks have three parts (shy zone, furniture zone and the walk/talk zone). See illustration to the right.

If driveways must interrupt, keep these to minimal widths (14 foot for one way, 26-28 for two way). Use contrasting colors and materials, and keep sidewalks fully flat across driveways.

Sidewalk widths may need to vary, according to existing building placement, and other constraints. Try to keep town center sidewalks to 12-16 feet, when practicable, but be willing to narrow when constraints exist.



How to Do It: Curb Extensions



Curb extensions help transform a place into a more attractive, natural, functional and prosperous town and center. Curb extensions capture all space not used by autos. By adding curb extensions, towns turn these vital spaces into civic and retail uses. All construction should be done in a way that it least disrupts local businesses. Winter Park, and Sanford, Florida replaced sewers, water lines and other infrastructure as part of its reconstruction. Streets were worked on at night, then covered during the day to maximize retail success.

Checklist: Moving Toward Change

Nearly every community in the country could benefit from some sort of change or improvement to the built environment to create or support walkability and livability. As groups of residents, leaders or organizations come together to create momentum for those changes, consideration should be given to which projects or interventions have the greatest chance of succeeding and which will have the greatest benefit. The scoring system below, created by Ontario, Canada’s Ministry of Health Promotion as part of the Community Physical Activity Planning resource manual, provides a good starting point for prioritizing efforts.

This checklist identifies a number of criteria that can be used to select projects for your plan. Not all criterion will be applicable to every project. Your committee may identify other criteria relevant to your plan. Rank proposed projects on a scale of 1-5 depending on how well they fulfill each criterion.

Criteria	Not applicable	Proposed Projects Fulfills Criterion				
		Completely	Satisfactorily	Not at all		
		5	4	3	2	1
Will achieve the goals and objectives of the plan						
Will addresses the needs of segments of the community targeted in our plan						
Will produce the desired results in the desired timeframe						
Will be supported by the parties responsible for implementation						
Has an existing agency prepared to assume responsibility for implementation						
Will be supported by the community						
Will be supported by community and external funding agencies						
Will not conflict with or duplicate existing projects in the community						
Takes full advantage of existing resources in the community						
Can realistically be implemented within the plan’s timeframe						
Can be implemented with available financial resources						
Can be implemented with available staff resources						
Is financially viable and sustainable over the long term						
Other Criteria:						

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