

A Complete Streets Guide

June 2020



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An example of a protected bike lane that was built as part of Burlington, Vermont's Quick Build program. Source: City of Burlington, VT

Introduction

In 2018, 39,404 Americans died in automobile crashes, according to the latest figures from the National Safety Council.¹ An additional 4.5 million people were injured in crashes. Over the past decade, an average of 37,282 people have lost their lives every year in fatal crashes. According to the Governor's Highway Safety Association, 6,283 pedestrians were killed in 2018²—the highest since 1990. That same year in Georgia, 1,739 people died in crash-related incidents and 17% of them were pedestrians. Further, a disproportionate number of those pedestrians were members of the most vulnerable groups: the elderly, people of color, and low-income persons. Georgia is the sixth-most dangerous state for pedestrians according to Smart Growth America's latest "Dangerous by Design" report (2019).

Complete Streets is a policy and design initiative formed in response to the danger found on roadways worldwide. Rather than designing the street primarily for automobile usage, this approach designs corridors that are safe for all types of travel, thereby "completing" the street. Based on urban planner Jeff Speck's definition, a Complete Street is useful, comfortable, interesting, and safe for ages 8-80. Streets designed to account for the inability to drive and the impulsiveness of an eight-year-old, as well as the mobility challenges of an 80-year-old, will naturally be safe for the rest of the population. The Complete Streets philosophy is often paired with the Vision Zero initiative (a strategy to eliminate all traffic fatalities and severe injuries) because both share the goal of making streets safe for everyone.

The negative impacts of streets designed to maximize traffic flow are not limited to fatalities. When streets are hostile to non-drivers, owning an automobile becomes a necessity. Those who are unable to purchase or drive an automobile, including economically disenfranchised, elderly, youth, and disabled individuals, find their access to the community sharply restricted. Meanwhile, those with a personal vehicle are burdened with the costs of car ownership (national average estimated at \$9,000 annually per vehicle by the American Automobile Association (2019).³ Automobile dependency increases pollution and sedentary lifestyles, as well as contributing to social isolation by lowering the likelihood of chance encounters one might have with neighbors in a walkable district. The increased demand for road capacity and parking lots creates outsized infrastructure construction and maintenance costs while decreasing the tax base by consuming land that could otherwise be used for value-creating uses like housing, businesses, and parks.⁴ When everyone drives, the onset of congestion is hastened because automobile lanes are the least-efficient means of transporting large numbers of people. Building neighborhoods and transportation networks around Complete Streets is among the most powerful tools a local government can use to create a safe, attractive, and prosperous community.



Complete Streets are streets for everyone. Source: NE 13th Street Fort Lauderdale, Florida

¹ <u>https://injuryfacts.nsc.org/motor-vehicle/overview/introduction/</u>

² <u>https://www.ghsa.org/issues/bicyclists-pedestrians</u>

³ <u>https://newsroom.aaa.com/auto/your-driving-costs/</u>

⁴ While public parks, themselves, may not contribute directly to a tax base, park areas have been shown to increase neighboring property values and attract development. <u>http://www.actrees.org/files/Research/parks_on_property_values.pdf</u>

Overview of Complete Streets

Designing streets where it is safe and reasonable to walk, bike, and ride public transit is not a new phenomenon. In fact, prior to the introduction of the automobile, all streets were naturally designed to be "complete" since walking was the most common transportation mode. The initial introduction of the automobile created a public outcry because of the skyrocketing toll in human lives. However, rather than restrict automobile usage in cities and small towns, policymakers responded by reserving most of the public right-of-way for automobiles and confined other modes of travel to the edges. After World War II, car ownership skyrocketed and driving took over as the dominant form of transportation. Cities tore down buildings to build highways and parking lots and the modern suburban development pattern was born.

As the negative impacts of these decisions have become more apparent, people have responded with various initiatives, including the concept of "Complete Streets." While the concept has existed for nearly 20 years, it has taken time for the idea to be embraced and implemented. According to Smart Growth America's Dangerous by Design 2019 report for Georgia, only 24 local governments in Georgia have adopted a Complete Streets policy, ordinance, or resolution, and most communities across the United States remain auto-dependent.⁵ Within the Northeast Georgia region, Athens-Clarke County is the only community with a Complete Streets program of any kind, taking the form of a policy approved by the Mayor and Commission in 2012. While multiple large cities in the United States (such as Washington and New York) are experimenting with Complete Streets, the most instructive examples for smaller communities in Northeast Georgia may come from the Netherlands, the world leader in Complete Streets design for communities of all sizes.

Since design standards are continually evolving, this guide will abstain from providing specific engineering plans. However, it will specify hallmarks of good design and provide examples. The Complete Streets concept has sometimes been implemented according to the letter of policies rather than the spirit. Standard bike lanes and sidewalks along 45 mph streets do not necessarily accomplish the goal of making the street safe for all users. This kind of design does not likely result in more walking or biking and may simply drive up the cost of construction and maintenance. Furthermore, this is not the only Complete Streets guide available; communities should consult the resources provided at the end of this document to make informed choices that will best serve their community.



Complete Streets projects often make use of existing roadway space, thereby lowering the cost of implementation. At completion all users of the roadway have a safe and comfortable space to travel. Source: CompletestreetsNC.org

⁵ <u>https://smartgrowthamerica.org/dangerous-by-design/</u>

Laying the Groundwork

Before communities begin pouring sidewalks and striping bike lanes, they should conduct thoughtful, intentional planning exercises. Community input should be at the heart of the planning process. Local governments should resist a top-down approach driven by professional preferences in favor of a bottom-up process driven by the needs and input of residents. Traditional planning methods (like public meetings) that require citizens to go out of their way to provide input may be de-emphasized in favor of observing the everyday transportation decisions made by citizens. Where are people already walking and biking under difficult conditions? Where are the dirt tracks or "desire lines" along the side of the road that people are using because there is no sidewalk? Where are the locations with the highest number of crashes or the most speeding? Where are the common jaywalking locations? Why are people making the transportation decisions that they are making? A planning process that is driven by this kind of bottom-up input and real-world observations will be more firmly grounded in the practical needs of residents and is far more likely to improve people's lives, thus potentially receiving better political support. Once this kind of input has been collected, professional data analysis and design can connect needs with appropriate solutions. Residents are experts on the challenges they face in the community. Professional planners and engineers are equipped with the tools to design facilities that will improve community safety and attractiveness.

Master plans are useful for network planning and delineation, especially if they are based on the kind of feedback referenced above. They can be beneficial if they help strategically apply resources to community needs. Unfortunately, master plans are sometimes relegated to dusty shelves, and too many communities treat them as one-time events rather than opportunities to establish ongoing feedback. Transportation planners should proactively seek continuous feedback and data. The difference in these approaches is similar to the difference between the suggestion box at a restaurant and the manager visiting each table to check on patrons.

Several types of directives can be used to promote Complete Streets, including resolutions, policies, and ordinances. **Resolutions** are the lowest-impact directive available to a local government. Since they are not legally binding, Complete Streets resolutions tend to be broad, symbolic, and aspirational, but they represent clear statements of intent from elected officials to the people implementing policy at the local level.

Complete Streets **policies** are a hybrid directive that are non-binding (like resolutions) and detailed (like ordinances). They can be approved by councils and commissions or, occasionally, adopted as departmental protocol. Policies often cover design standards, implementation procedures, expectations and intent, performance measures, and project selection criteria. Departmental policies can be customized to further clarify ordinances as staff implement specific projects.

A Complete Streets **ordinance** differs from the other directives because it is legally binding. Due to the need to build political consensus, it can take longer to adopt than a resolution or policy, but once adopted, it can be translated into immediate community-backed action. An ordinance creates the strongest legal backstop for the initiative and helps integrate it into the normal operating procedures of the local government. It is also the only directive that can effectively force new development to include Complete Streets. The Northeast Georgia Regional Commission has conducted research on this topic, and recommends an internally modified version of an ordinance, created by ChangeLab Solutions, as a model for local governments (see Appendix A). In general, all policies and ordinances should have a clear purpose, benefit all users equitably, apply to all projects and streets, specify responsible parties, establish specific exemptions, be sensitive to the surrounding land-use context, set performance metrics, establish implementation measures, and direct the use of the ever-changing latest and best design standards.

Design

As previously stated, the Complete Streets design field is constantly evolving. While this guide generally avoids specific engineering advice, it does specify principles and tips for good design. At its heart, the Complete Streets philosophy intends to create a safe, useful, comfortable, and interesting corridor for people ages 8-80. By designing the street for children and seniors, planners will create a street that is accessible via multiple modes and accounts for the inexperience of youth and the potential impaired mobility of seniors. This principle can be framed as designing the street for pedestrians, bicyclists, transit riders, and vehicle operators, in that order. By designing for the most vulnerable user, the street will naturally be safe and comfortable for other users.

Streets can also be designed according to a framework that prioritizes safety, cost, volume, and speed, in that order. By sacrificing the speed and volume of hyper-efficient, automobile throughput on local streets, designers can create cheaper, safer Complete Streets that serve as flexible platforms for creating community wealth and vibrancy. Roads intended for travel between towns—such as highways and arterials—should still be designed for high vehicle throughput and limited access. By adhering to these design priorities, streets and roads serve the purposes for which they are best suited: **streets** will provide high levels of access to many local destinations and **roads** will provide a high degree of mobility for long-distance travel. Specific design distinctions between streets and roads can be found in the Street Typology and Illustrations chapter of this Guide.

Street design relies on the principle of creating safety through slow vehicle speeds because of the shorter stopping distance and time required to avoid a potential crash or other incident. Every single mile-per-hour increase in speed dramatically raises the risk of injury and death for a person that is struck by a vehicle.⁶ Reducing the speed of automobiles is the most important factor in creating a Complete Street.

Planners and engineers can reduce speeds by physically and visually narrowing the street. Design elements, including slimming vehicle travel lanes to 10 feet or less, tightening curb radii, adding on-street parking, planting street trees, and adding protected bicycle lanes are effective means to narrow the street. Some streets may require 10.5- or 11-foot lanes to accommodate the current size of buses and fire trucks; fleet managers should consider purchasing narrower vehicles as they proceed through the normal replacement process. Vehicles should be designed to fit the city rather than the city designed to fit large vehicles. Critically, all designs should be safe, even in the presence of human error and unpredictability.

Instead of designing for a high Level of Service or the 85th percentile speed, streets should be designed with a target speed of 15-30 mph while roads should be designed with a target speed 55 mph and above. Roadways that fall in-between these ranges become street-road hybrids that are too fast for safe multi-modal access and too slow for efficient long-distance travel. Local governments are encouraged to designate specific routes as "roads" and designate the rest of the local transportation network as "streets" that are designed to be "complete" based on the surrounding land-use context and transportation network. As automobile speed and volume increase, so does the need for separation between motor vehicles and other users of the roadway. Avoid creating "mixing zones" between bikes and right-turning cars as well as unnecessary turn lanes.

Planners should replace the hierarchical road network model with a model like the traditional grid network that prioritizes connections and access within a community, rather than fast travel through it. The current hierarchical system is designed to funnel automobiles from dispersed, isolated streets like cul-de-sacs onto ever larger and faster collectors, arterials, and highways. This branching network

⁶ https://nacto.org/docs/usdg/relationship between speed risk fatal injury pedestrians and car occupants richards.pdf

lengthens the distance between destinations and exposes people who are walking and biking to higher volumes of traffic at dangerously fast speeds. Even if sidewalks and bike lanes are added to certain components of this network, safety impacts may be diminished greatly because the distance between most destinations is too far for convenient non-automotive travel. By re-orienting real estate development around a compact, highly accessible network like the traditional American or Spanish grid, planners can disperse traffic along streets that are suitable for multiple modes of travel while offering the potential for carrying a greater volume across all modes in a more efficient manner, despite slower speeds.



The block (or "grid") structure allows for multiple connections, distributes traffic across multiple routes, and increases multimodal access to properties compared to the hierarchical network. Source: Bastrop Block Models. Simplecity Design

A connected network can be implemented through the zoning or development code, as is the case in Davidson, North Carolina. While Davidson does not mandate a grid, development is required to adhere to block length maximums and create multiple connections between parcels, including stubs to adjacent, undeveloped property. Bastrop, Texas goes a step further by providing a block template in their form-based code and a master thoroughfare plan that specifies where the existing grid will extend as the city grows.



Source: Google Maps Aerial of the Antiquity neighborhood in Davidson, NC

Complete Streets policies and transportation decisions should not be divorced from land use decisions. Transportation engineers and land use planners must work together because decisions made in either arena will have dramatic impacts on the other. For example, constructing the interstate highway system made the auto-oriented post-WWII suburban development pattern possible. Today, parking minimums in zoning codes reinforce automobile-dependent transportation systems. Comprehensive plans, zoning or development codes, and transportation plans must be in alignment in

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order to create a community where Complete Streets can have the maximum effect. Specifically, compact, walkable, and human-scaled development should be the norm throughout most urban and suburban areas—including small towns. Communities that desire to create this land use pattern can look to the principles of New Urbanism and Smart Growth for guidance.

When paired with compatible land use, Complete Streets serve as platforms for generating community prosperity. Streets that are safe, comfortable, useful, and interesting for people ages 8-80 tend to draw more people to those locations. In turn, those locations become attractive places to live and conduct business. Various studies have found that bike lanes—a key component of many Complete Streets—can actually boost sales for businesses located along the lanes.⁷ Homes in walkable neighborhoods command a premium between \$4,000 and \$34,000 more than houses in auto-dependent places.⁸ It's important to note that the potential negative impacts of rising property values should be considered as communities implement Complete Streets. Ensuring a variety of housing options are provided within these areas potentially including zoning reforms, affordable housing subsidies, and property tax relief can help offset those effects. Additionally, expanding the Complete Streets network to additional neighborhoods can increase the available supply of walkable places. Complete Streets also have been shown to prompt declines in personal transportation and health costs.⁹ Complete Streets often offer a better return on investment than similar capital expenditures on automobile mobility.



A "tactical urbanism" demonstration project put on by the Better Block Foundation in Kansas City. The value of a demonstration project lies in allowing the community to test proposals before committing capital to a permanent improvement. Source: Community Architect Daily, Photographer Tim Fitzwater, <u>https://communityarchitectdaily.blogspot.com/2018/03/erase-fear-of-permanency-pathways-for.html</u>

⁷ <u>https://www.bloomberg.com/news/articles/2015-03-13/every-study-ever-conducted-on-the-impact-converting-street-parking-into-bike-lanes-has-on-businesses</u>

⁸ https://nacto.org/docs/usdg/walking the walk cortright.pdf

⁹ <u>https://www.vtpi.org/walkability.pdf</u>

Implementation

Plans are only as good as their implementation, and many Complete Streets initiatives founder at the implementation stage. The Chicago Metropolitan Agency for Planning recommends that local, professional staff plan internally for implementation, change processes and procedures, offer training, and measure progress of the Complete Streets initiative.

Planning for implementation starts with assigning responsibility for Complete Streets to specific people within the city or county (usually the department of transportation or public works). Some communities create a staff position solely for this purpose. Communities should also consider setting up an oversight committee to review ongoing progress regularly. This committee can be composed of internal staff or serve as a citizen board.

Developing a Complete Streets master plan can be helpful to guide resource deployment. Connecting residents to their jobs, schools, and daily destinations should be the heart of the plan. By grounding the plan in the demonstrated user needs, such as desire lines and common jaywalking locations, the plan will be more likely to be effective and garner public support. Instead of basing a plan on transportation theories and assumptions, it should be built on bottom-up feedback from residents and observations of the actual choices of users on the community's streets. Often, plans fail because they were driven by top-down planners who lacked the resources and public support to implement the plan. Systemic bicycle/pedestrian infrastructure networks can come with a multi-million dollar price tag. Planners should provide lower-cost, interim infrastructure options so that implementation can begin immediately. Existing land use and transportation plans should be updated together or in series to reflect proper implementation of Complete Streets.

To maximize effectiveness, processes and documents, such as zoning codes, ordinances, project selection criteria, plan reviews, and design standards, must also be updated to reflect the values of the new initiative. While templates and standards are helpful, they should not become ends in themselves. The goal is to see more people safely and comfortably using the street, especially those who are walking and biking. Infrastructure upgrades that do not lead to increased multi-modal usage should be re-evaluated for further improvement of the design. Maintenance and operations should also be evaluated for ways that Complete Streets designs can be implemented during routine activities, such as restriping or signal timing.

Cities and counties should offer ongoing training opportunities to educate staff, community leaders, and the public about the values, rationale, and design of Complete Streets. The specific design guidelines regularly evolve, so keeping staff and elected officials up-to-date is especially important. Various learning opportunities can be helpful, including professional development, walk audits, and public engagement.

Measuring the proper outputs and outcomes is critical to successful implementation. Outputs such as miles of Complete Streets, percentage of the street network that is deemed "complete," and the number of people who have a quality multi-modal connection from their residence to workplaces and schools are useful, but the best measures look at outcomes that measure changes in activity. Outcomes like a reduction in speeding and crashes and an increase in the number of people (especially families) walking and biking are the strongest indicator of successful projects. Before-and-after comparisons on individual projects are essential. While the goal of a Complete Street is not to maximize vehicle travel time, that metric can be used as part of the before-and-after analysis to determine the validity of anecdotal observations of driving delays associated with certain projects.

Once it is time to start drawing up specific projects for execution, consider the following approaches to improve the design and approval process:

- Connect the project back to the values identified at the outset of the community's Complete Streets initiative, such as safety, health, environmental stewardship, freedom of movement, equitable access, and economic vitality.
- When identifying potential projects, communities should look into where people are already biking and walking (especially under duress) and improve that infrastructure.
- Elected leaders and staff should also work with neighborhood coalitions to advocate for the project and avoid turning well-organized entities into adversaries.¹⁰
- Projects should be integrated into a network that connects people with their most important
- destinations. Communities that take a piecemeal approach to improvements will not get the results they are looking for and may trigger public opposition to "wasteful" projects that do not readily improve transportation choices. Establish a basic network that connects major destinations as guickly as possible. Complete Streets are intended to create a functional transportation network that connects residents with jobs, schools, and other destinations rather than a recreational amenity. Once this network is established, incrementally expand and iterate based on feedback and available resources. The tactical urbanism approach can be especially useful for network expansion because it allows for the establishment of a larger network at the same cost as a permanent improvement of a smaller section. Macon, Georgia provides a good example of how a tactical network can be set up.11

"Tactical Urbanism"

Instead of waiting for large pots of money to begin putting projects on the ground, communities should use a "tactical urbanism" approach to implementation. Tactical urbanism uses temporary and intermediate materials (i.e., cones and paint) to create demonstration projects. These experiments allow for direct feedback on the effectiveness of the design, as well as for correction of mistakes before permanent infrastructure is built. They can also diffuse some of the concerns that inevitably come with change. Using a lighter, quicker, and cheaper initial design allows communities to stretch limited resources, improve the quality of the final design, and convert plans into action in a shorter timeframe, which is a key step toward maintaining momentum gained in a planning process after adoption.

- Communities are also encouraged to prioritize an implementation plan that maximizes the effectiveness of existing capital. Grants and debt are best suited for individual projects with high strategic network value that justifies the burdens these funding sources can create. By developing infrastructure with the resources at hand, communities are more likely to implement projects based on the greatest return of value.
- Finally, the Complete Streets initiative should be undertaken as a commitment to an incremental, ongoing, and iterative process rather than a one-time investment. The Netherlands is world-renowned for the country's bike network, but success there has been achieved during a 45-year process of implementation. This is not because of slow project delivery; rather, it is a reflection of a steady commitment to an ongoing process of improvement. Streets can continue to be improved even after they are deemed "complete."

¹⁰ The NEGRC produced <u>Transportation Planning & Prioritization: A Guide for Local Governments</u> to assist cities and counties with identifying and implementing projects (June 2020)

¹¹ https://www.880cities.org/images/macon-connects-street-makeover-report.pdf

Complete Streets should not be treated as an engineering buzzword or design fad. The foundation of the Complete Streets initiative is not a set of street templates, but instead is a set of **values**. By incorporating these values into street planning, design, and construction, communities are taking action toward becoming safer, healthier, greener, more accessible, and more prosperous places for everyone.

Street Typology and Illustrations

The tables below provide a typology of all thoroughfares (roads and streets) with recommended Complete Street design measures. Complete Street designs are most appropriate for street-type thoroughfares. Complete Street design recommendations for each street type (including sample illustrations) follow.

Roads:

Туре	Design Context	Recommended Design
Interstate Divided Highway (At-grade intersections)	Speed: 55+ mph Intent: Provide fast long-distance connection with limited access.	These are not appropriate places for walking and biking, except where a dedicated, highly separated facility such as a multi-use side-path is provided
Rural Highway (Two-lane)	Speed: 45+ mph Intent: Provide fast long-distance connection. Technically, these roads have unlimited access, but their rural context naturally limits the number of driveways and intersections.	These are not appropriate places for walking and biking, except where a dedicated, highly separated facility such as a multi-use side-path is provided, but a wide shoulder may be used in certain areas to link otherwise disconnected parts of the multi-modal network.

Streets:

Туре	Design Context	Recommended Design
Primary Multi- Modal	Speed: 25-30 mph Intent: Provide local cross-city and neighborhood connections while still allowing a high degree of access to adjacent properties. Higher capacity for all types of users, and each user group gets an exclusive portion of the ROW. Low-to-moderate speeds ensure safety for all user groups.	Wide sidewalks, street trees, and protected bike lanes should be provided. On-street parking may or may not be present, depending on the use of the street. If present, it can be used to protect bike lanes and reduce the need for off-street parking. Bus-only lanes may also be considered. Multi-use paths may be considered if sidewalks and on-street bike lanes physically cannot be constructed or if recreation is the primary use.
Local Connector	Speed: 15-25 mph Intent: Provides a higher degree of access to adjacent property but carries less volume than the primary multi- modal street. Connectors contribute to the interconnectivity of the street network rather than dead-ending in cul-de-sacs.	Striped centerline connector: If the street carries enough traffic to justify a striped centerline, bike lanes and sidewalks should also be constructed. Unstriped (residential) connector: Single-lane yield streets (see Illustrations section) often strike the best balance between safety, access, and cost. In compact urban neighborhoods, on-street parking and sidewalks should be provided. In suburban and rural contexts, narrow, curb-less streets can be shared by all users where traffic volumes and speeds are low. Dashed pavement markings denoting center travel lane and signage as used on the advisory shoulder (see Illustrations section) may enhance the safety of the street.
Rural Local Connector	Speed: 15-20 mph Intent: Local access to large lots, farms, and open space	These streets may or may not be paved. Curb-less, single-lane yield streets with advisory shoulders can be shared by all users and still provide access to farm machinery.

Recommended Complete Street Designs (with Illustrations)

The following provides a breakout of each street type and recommended Complete Street designs. When Complete Street planning for your community, it's important to note that some streets may require an extensive overhaul to become "complete," while others may simply need restriping. Prioritizing simple projects, like restriping, and utilizing tactical urbanism methods can expand the network at a low cost. Wherever possible, bike lanes should be protected from moving vehicles by physical barriers like flex posts, parking stops, parked vehicles, or concrete medians. As demonstrated by the sample Complete Street illustrations for Local Collectors, Informal Complete Street, and Advisory Shoulders, a Complete Street does not need extensive infrastructure to be complete, especially on the low-speed, low-volume roadways often found in suburban and rural places. In those contexts, a narrow street—not bike lanes and sidewalks—is the most critical design element. The Advisory Shoulder, with its simple restriping and signage, has the potential to create inexpensive Complete Streets out of the numerous low-volume, two-lane streets in many suburban and rural places.

Primary Multi-Modal Streets

Speed: 25-30 mph

Intent: Provide local cross-city and neighborhood connections while still allowing a high degree of access to adjacent properties. Higher capacity for all types of users, and each user group gets an exclusive portion of the ROW. Low-to-moderate speeds ensure safety for all user groups.



Figure 1.A.i Primary Multimodal Street A

This layout maintains traditional two-way, two-lane street operation, incorporating one-way bike lanes on either side of the drive lanes and sidewalks protected by street trees on both sides.



Figure 1.A.ii Primary Multimodal Street A (Protected) This layout provides added safety by adding barriers and additional separation between cyclists and drivers.



Figure 2.B.i Primary Multimodal Street B

This layout is appropriate for multi-modal streets with slightly higher traffic counts, providing a center turning lane for vehicles. On-street parking is also provided in this design. Cyclists' safety is enhanced through barriers and additional separation between bicycle and driving lanes. Sidewalks are provided on both sides of the street, protected by street trees, the protected bicycle lanes, and parking lane.



Figure 2.B.ii Primary Multimodal Street B (Transit)

This layout provides designated transit lanes and is appropriate for streets with a fixed transit route. Two-way bicycle lanes are provided and some protection is provided from personal vehicles by the space created through the dedicated transit (bus) lane. Sidewalks are provided on both sides of the street, protected by street trees.



Figure 3.C.i Primary Multimodal Street C

This layout is appropriate for multimodal streets primarily serving commercial retail. Significant on-street parking is provided (some spaces can be reserved for deliveries if necessary). The parking protects cyclists in both directions. Street trees provide shade for customers, pedestrians, and cyclists while beautifying the street. Sidewalks are provided on both sides of the street, protected by street trees, bicycle lanes, and the parking lane.





This layout provides designated transit lanes and is appropriate for streets with a fixed transit route. One-way bicycle lanes are provided and some protection is provided from personal vehicles by the space created through the dedicated transit (bus) lane. Sidewalks are provided on both sides of the street, protected by street trees.



Figure 3.D Protected Intersection

Most vehicle-bike conflicts occur at intersections, so special attention must be given to their design (see NACTO's "Don't Give Up at the Intersection" guide in the Resources section for guidance on Complete Street intersection design). Source: BicycleDutch, Mark Wagenbuur, <u>https://bicycledutch.wordpress.com/2011/04/07/state-of-the-art-bikeway-design-or-is-it/</u>

Local Connector Streets

Speed: 15-25 mph

Intent: Provides a higher degree of access to adjacent property but carries less volume than the primary multimodal street. Connectors (or "Collectors") contribute to the interconnectivity of the street network rather than dead-ending in cul-de-sacs.



Figure 4.A.i Local Collector A

This design is intended for dense urban neighborhoods where heavy demand for on-street parking exists. This street has a twoway center travel lane that is approximately 10 feet wide. Automobiles can use gaps in the parking to pull over and allow vehicles to pass from the opposite direction. Vehicle traffic speeds and volumes are low enough to allow cyclists to share the travel lane while sidewalks that are shaded and protected by street trees are provided for pedestrians.



Figure 4.A.ii Two-Way Urban Yield Street

An illustration of how Local Collector A could be implemented. On-street parking must be regularly used if this design is to succeed. Additional dashed striping of the central travel lane as shown on the Advisory Shoulder could help clarify the desired behavior of users. *Source: Peter Furth, Cambridge, MA*



Figure 4.B Local Collector B

This design is intended for less dense urban neighborhoods where the demand for on-street parking is smaller than Local Collector A. The street has a two-way travel lane approximately 10 feet wide. Vehicles can park on either side of the street, as long as they do not block thru access. Automobiles can use gaps in the parking to pull over and allow vehicles to pass from the opposite direction. Vehicle traffic speeds and volumes are low enough to allow cyclists to share the travel lane while sidewalks that are shaded and protected by street trees are provided for pedestrians

Rural Local Connector

Speed: 15-20 mph Intent: Local access to large lots, farms, and open space



Figure 4.C.i Local Collector C

This design is intended for rural and suburban streets with low-density development. Streets are up to 18 feet in width with a two-way center travel lane for automobiles that can be demarcated with dashed lines as shown in the Advisory Shoulder illustration below. Space is provided outside the travel lane for cyclists and pedestrians. Provided that there are no pedestrians or cyclists in the area, vehicles can use the full width of the street to pass each other. Traffic speeds and volumes are low enough that all users can share the street safely without the need for sidewalks and dedicated bike lanes.

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Figure 4.C.ii Advisory Shoulder

An illustration of how Local Collector C might be implemented. Source: FHWA's Small Towns and Rural Multimodal Networks

Resources

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Communities should refer to this guide as they evaluate the choices and transitions that come with Complete Streets; however, it is not intended to be a standalone resource for a local Complete Streets initiative. Additional, recommended resources to accompany this guide include the following:

Design and Policy Guides

- City of Burlington's Quick Build Design and Materials Standards, available here: <u>https://www.burlingtonvt.gov/sites/default/files/QUICK_BUILD%20GUIDE_0.pdf</u>
- The Chicago Metropolitan Agency for Planning's Complete Streets Toolkit, available here: <u>https://www.cmap.illinois.gov/programs/local-ordinances-toolkits/complete-streets</u>
- The Congress for the New Urbanism & the Institute for Transportation Engineers' Implementing Context-Sensitive Design Handbook, available here: <u>https://www.cnu.org/our-projects/cnu-ite-manual</u>
- CROW (multiple guides), available here: <u>https://crowplatform.com/</u>
- Federal Highway Administration's Small Town and Rural Multimodal Networks, available here: <u>https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/</u>
 - National Association of City Transportation Officials (multiple guides), available here:
 - Urban Bikeway Design Guide <u>https://nacto.org/publication/urban-bikeway-design-guide/</u>
 - Urban Street Design Guide <u>https://nacto.org/publication/urban-street-design-guide/</u>
 - Don't Give Up at the Intersection: Designing All Ages and Abilities Bicycle Crossings <u>https://nacto.org/publication/urban-bikeway-design-guide/dont-give-up-at-the-intersection/</u>
 - City Limits: Setting Safe Speed Limits on Urban Streets <u>https://nacto.org/wp-content/uploads/2020/07/NACTO_CityLimits_Spreads.pdf</u>
- Smart Growth America's National Complete Streets Coalition, available here: <u>https://smartgrowthamerica.org/program/national-complete-streets-coalition/</u>
- TrailNet's Slow Your Street: A How-To Guide For Pop-Up Traffic Calming, available here: <u>https://drive.google.com/file/d/1b1LlnIRmN9vaHyY-dspcu0aaKVhhEJaV/view</u>
- Tactical Urbanism: Short Term Action for Long Term Change by Mike Lydon and Anthony Garcia <u>https://islandpress.org/books/tactical-urbanism</u>

Further Reading and Resources

- Building the Cycling City: The Dutch Blueprint for Urban Vitality by Chris and Melissa Bruntlett, <u>https://islandpress.org/books/building-cycling-city</u>
- Strong Towns' #SlowtheCars Campaign, <u>www.strongtowns.org/slowthecars</u>
- Start With the Streets How Anyone Can Make Their City Safer and Wealthier, One Block At a Time by Strong Towns <u>https://static1.squarespace.com/static/53dd6676e4b0fedfbc26ea91/t/5dc25831d1f4402fc2831</u> 692/1573017731326/Start+with+the+Streets
- Walkable City Rules: 101 Steps to Making Better Places by Jeff Speck, <u>https://islandpress.org/books/walkable-city-rules</u>

Appendix A: Model Ordinance

With the permission of ChangeLab Solutions, the Northeast Georgia Regional Commission has included a model Complete Streets ordinance. Some of the language has been modified from the original sample (also with permission from ChangeLab). Further modifications may be carried out by interested local governments to suit community needs. Prior to adoption, the ordinance should be reviewed by the legal counsel of any adopting local government.



nplan

NATIONAL POLICY & LEGAL ANALYSIS NETWORK TO PREVENT CHILDHOOD OBESITY

Model Local Ordinance on Complete Streets

changelabsolutions.org I nplan.org



The National Policy & Legal Analysis Network to Prevent Childhood Obesity (NPLAN) is a project of ChangeLab Solutions. ChangeLab Solutions is a nonprofit organization that provides legal information on matters relating to public health. The legal information in this document does not constitute legal advice or legal representation. For legal advice, readers should consult a lawyer in their state.

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Introduction

"Complete streets" allow people to get around safely on foot, bicycle, or public transportation. Streets designed only for cars are dangerous for everyone else, and contribute to the obesity epidemic, by making it difficult for children and adults to get regular physical activity during their daily routine. In contrast, complete streets are safer, more convenient, and comfortable not only for drivers but also for pedestrians, bicyclists, children, and people with disabilities.

Model Local Ordinance

Local governments have the power to fight childhood obesity and improve community health by passing complete streets policies that foster streets safe for active travel. At the National Policy & Legal Analysis Network to Prevent Childhood Obesity (NPLAN), we developed this Model Local Ordinance on Complete Streets to assist localities in making streets safe, comfortable, and convenient for everyone. Our models are developed by thoroughly surveying existing law, conducting extensive legal research, and consulting legal and policy experts. Using these models, jurisdictions can feel confident in passing laws to improve community health. Because NPLAN is a national program, we cannot provide legal analysis that is tailored to each state's laws; it is important to consult local counsel, who may need to alter elements of this model to comply with state law. In addition, states vary widely in how their transportation systems are organized and administered, so local counsel may need to assist with any necessary customization.

Local Resolution Versus Local Ordinance

NPLAN has also developed a Model Local Resolution on Complete Streets. The model resolution encourages local agencies to approach every street project as an opportunity to make streets safe and welcoming for all users, but it is more exploratory and less directive than the model ordinance. Resolutions are often procedurally easier to enact than ordinances, and they can be an effective first step for a local government. A jurisdiction may pass a complete streets resolution and later go on to pass a law, but a resolution is not necessary where the complete streets law is adopted.



Policy Options

The model offers a variety of policy options. In some instances, alternate language is offered (e.g., $[\underline{night} / \underline{day}]$) or blanks have been left (e.g., $[__]$) for the language to be customized to fit the needs of a specific community. In other instances, the options are mentioned in annotations ("comments") following the legal provisions. In considering which options to choose, drafters should balance public health benefits against practical political considerations and other local conditions in the particular jurisdiction. One purpose of including a variety of options is to stimulate broad thinking about the types of provisions a community might wish to explore, even beyond those described in the model. NPLAN is interested in learning about novel provisions that communities are considering. Please contact us through our website: www.nplan.org.

Findings

An appendix entitled "Appendix A: Findings" accompanies this model. The Findings supply a variety of evidence-backed factual conclusions that support the need for adoption and implementation of a complete streets policy. Each jurisdiction should select those findings it views as most appropriate, and add findings related to specific community conditions or concerns.

An Ordinance of the [<u>Local government</u> (E.G. City Of____)] Providing for Complete Streets and Amending the [<u>Local government</u>] Code

The [<u>Adopting body</u>] does ordain as follows:

SECTION I. FINDINGS. The [<u>Adopting body</u>] hereby finds and declares as follows:

SEE APPENDIX A: FINDINGS

A draft ordinance based on this model should include "findings" of fact ("whereas" clauses) that support the need for the local government to adopt the ordinance. The findings section is part of the ordinance, but it usually does not become codified in the local government code. The findings contain factual information supporting the need for the law – in this case, documenting the need for complete streets. A list of findings supporting this model ordinance appears in "Appendix A: Findings." Local governments may select findings from that list to insert here, along with additional findings addressing the need for the ordinance in the particular community.

NOW THEREFORE, it is the intent of the [<u>Adopting body</u> (*e.g., city council*)] in enacting this ordinance to encourage healthy, active living, reduce traffic congestion and fossil fuel use, and improve the safety and quality of life of residents of [<u>Local government</u>] by providing safe, convenient, and comfortable routes for walking, bicycling, and public transportation.

SECTION II. [<u>Article</u> / <u>Chapter</u>] of the [<u>Local government</u>] Local Government Code is hereby amended to read as follows:

Sec. [_____ (*1)]. **PURPOSE.** The purpose of this [<u>article</u> / <u>chapter</u>] is to enable the streets of [<u>Local government</u>] to provide safe, convenient, and comfortable networks for walking, bicycling, and public transportation that encourage increased use of these modes of transportation, enable convenient travel as part of daily activities, improve the public welfare by addressing a wide array of health and environmental problems, and meet the needs of all users of the streets, including children, older adults, and people with disabilities.

COMMENT: Local governments may add additional reasons to this purpose clause as appropriate or desired.

Sec. [_____ (*2)]. DEFINITIONS. The following words and phrases, whenever used in this [$\frac{\text{article}}{\text{chapter}}$], shall have the meanings defined in this section unless the context clearly requires otherwise:

COMMENT: Local government codes contain many definitions; local governments should ensure that the definitions from this ordinance appear in the correct section and that modifications occur as needed.

(a) "Complete Streets Infrastructure" means design features that contribute to a safe, convenient, or comfortable travel experience for Users, including but not limited to features such as: sidewalks; shared use paths; bicycle lanes; automobile lanes; paved shoulders; street trees and landscaping; planting strips; curbs; accessible curb ramps; bulb outs; crosswalks; refuge islands; pedestrian and traffic signals, including countdown and accessible signals; signage; street furniture; bicycle and personal mobility device parking facilities; public transportation stops and facilities; transit priority signalization; traffic calming devices such as rotary circles, traffic bumps, and surface treatments such as paving blocks, textured asphalt, and concrete; narrow vehicle lanes; raised medians; and dedicated transit lanes [, <u>as well as other features such as insert other accommodations if desired</u>] [, <u>and those features identified in insert name of Local Government's Pedestrian/Bicycle Master Plan if it exists</u>].

COMMENT: Although features such as street trees and landscaping have traditionally not been included in transportation infrastructure, these features are crucial for pedestrian comfort and safety. They are incorporated into this definition to ensure that Complete Streets Infrastructure addresses the needs of all Users.

(b) "Street" means any right of way, public or private, including arterials, connectors, alleys, ways, lanes, and roadways by any other designation, as well as bridges, tunnels, and any other portions of the transportation network.

COMMENT: This definition of "street" includes both public and private streets, and is broader than similar definitions contained in most local government codes. The effect is to make many provisions of this ordinance applicable or potentially applicable to private streets.

(c) "Street Project" means the construction, reconstruction, retrofit, maintenance, alteration, or repair of any Street, and includes the planning, design, approval, and implementation processes [, except that "Street Project" does not include minor routine upkeep such as cleaning, sweeping, mowing, spot repair, or interim measures on detour routes] [and does not include projects with a total cost of less than \$[__]].

COMMENT: In defining "Street Project," a local government can use the following clause to reference and include the terms and definitions that are used to describe local street projects (e.g. capital project, major maintenance project, annual maintenance projects): "as well as *[insert local project terms]*."

(d) "Users" mean individuals that use Streets, including pedestrians, bicyclists, motor vehicle drivers and passengers, public transportation riders and drivers, [insert other significant local users if desired, e.g. users of personal mobility devices like e-scooters, drivers of agricultural vehicles, emergency vehicles, or freight] and people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities.

Sec. [_____ (*3)]. REQUIREMENT OF INFRASTRUCTURE ENSURING SAFE TRAVEL.

(a) [Insert appropriate agencies, such as Department of Transportation, Department of Public Works, Department of Planning] shall make Complete Streets practices a routine part of everyday operations, shall approach every transportation project and program as an opportunity to improve public [and private] Streets and the transportation network for all Users, and shall work in coordination with other departments, agencies, and jurisdictions to achieve Complete Streets.

COMMENT: This provision, like many of the following provisions, allows local governments to choose whether to apply the requirement to private streets in addition to public streets. Generally, it will expand the effectiveness of the ordinance to apply it to private streets. However, such a requirement may be more practical in certain jurisdictions than in others. For example, the requirement might be very important in a jurisdiction where there are many private streets in central locations.

(b) Every Street Project on public [and private] Streets shall incorporate Complete Streets Infrastructure sufficient to enable reasonably safe travel along and across the right of way for each category of User; provided, however, that such infrastructure may be excluded, upon written approval by [*insert senior manager, such as City or County Manager or the head of an appropriate agency*], where documentation and data indicate that:

COMMENT: This provision, which requires that street projects on new or existing streets create Complete Streets, is a fundamental component of a commitment to Complete Streets. This clause provides crucial accountability in the exceptions process by requiring documentation, a transparent decision-making process, and written approval by a specified official.

1. Use by non-motorized Users is prohibited by law;



- 2. The cost would be excessively disproportionate to the need or probable future use over the long term;
- 3. There is an absence of current and future need; or

COMMENT: Data showing an absence of future need might include projections demonstrating low likelihood of pedestrian or bicycling activity in an area. **Such projections should be based on demographic, school, employment, and public transportation route data, not on extrapolations from current low mode use.**

(c) As feasible, [Local government] shall incorporate Complete Streets Infrastructure into existing public [and private] Streets to improve the safety and convenience of Users, and to construct and enhance the transportation network for each category of Users.

COMMENT: This provision sets forth the local government's desire and intent to retrofit existing streets to increase safety for all users, but the words "as feasible" leave the local government great flexibility to do only what it determines to be a priority.

(d) If the safety and convenience of Users can be improved within the scope of pavement resurfacing, restriping, or signalization operations on public [and private] Streets, such projects shall implement Complete Streets Infrastructure to increase safety for Users. Streets with an Annual Average Daily Traffic (AADT/ADT) count below 25,000 shall be assessed for driving lane reduction potential, along with addition of Complete Streets Infrastructure. Activities such as temporary construction and/or demolition that infringe on the public right-of-way and obstruct one or more travel mode must make appropriate accommodations so that no User is prevented from navigating the right-ofway, wherever possible.

COMMENT: This provision is intended to encourage new bicycle lanes and reductions in the number of vehicle lanes where feasible as part of the restriping of pavement lines and markings during resurfacing, and to encourage improvements for pedestrians, particularly people with disabilities and older adults, as part of signalization projects. It also provides special mention to maintaining existing bicycling and walking facilities during periods of roadwork or other disturbances along a corridor that could temporarily close dedicated Complete Streets Infrastructure and leave Users without safe facilities.

(e) [Insert appropriate agencies, such as Department of Transportation, Department of Public Works, Department of Planning] shall review and either revise or develop proposed revisions to all appropriate plans, zoning and subdivision codes, laws, procedures, rules, regulations, guidelines, programs, templates, and design manuals, including [insert name of Local government's comprehensive plan equivalent as well as *all other key documents by name*], to integrate, accommodate, and balance the needs of all Users in all Street Projects on public [and private] Streets within one (1) year of the passage of this ordinance.

- (f) In design guidelines, [insert appropriate agencies] shall coordinate templates with street classifications and revise them to include Complete Streets Infrastructure, such as bicycle lanes, sidewalks, street crossings, and planting strips consistent with current best practices. These shall be updated on a regular basis, occurring no less frequently than on two-year intervals.
- (g) Trainings in how to integrate, accommodate, and balance the needs of each category of Users shall be provided for planners, civil and traffic engineers, project managers, plan reviewers, inspectors, and other personnel responsible for the design and construction of Streets. Trainings shall be held annually.

COMMENT: Such trainings may cover a range of topics: a basic introduction to the concept of Complete Streets, an exploration of advanced implementation questions, or an overview of how to apply new systems, policies, and requirements put in place by the jurisdiction to implement Complete Streets.

Sec. [_____ (*4)]. DATA COLLECTION, STANDARDS, AND PUBLIC INPUT.

(a) [Insert appropriate agency or agencies] shall collect and analyze data measuring how well the Streets of [Local government] are serving each category of Users on a regular and continuous basis. An annual progress report shall be submitted to the committee established in [Sec ____ *5 (b.)].

COMMENT: Local governments should look at multimodal user counts, latent demand, existing levels of service for different modes of transport and users, collision statistics, bicycle and pedestrian injuries and fatalities, and so on.

(b) [*Insert appropriate agency or agencies*] shall put into place performance standards with measurable benchmarks reflecting the ability of Users to travel in safety and comfort.

COMMENT: Specific performance standards, with clear benchmarks and timeframes, greatly increase accountability and the ability to assess progress toward a goal. Communities that are just beginning to move toward Complete Streets may wish to establish limited benchmarks, whereas those seeking rapid and substantial impact will want to specify detailed performance standards. In establishing performance standards, local governments should look at areas such as transportation mode shift, user counts (especially vulnerable populations like

children), collision statistics, bicycle and pedestrian stress levels, miles of new bicycle lanes and sidewalks, percentage of streets with tree canopy and low design speeds, public participation, and so on.

- (c) [Insert appropriate agency or agencies] shall establish procedures to allow full public participation, especially by members of historically disenfranchised groups, in policy decisions and transparency in individual determinations concerning the design and use of Streets.
- (d) [Insert appropriate agency, agencies, or official] shall implement, administer, and enforce this [article / chapter]. [Agency] is hereby authorized to issue all rules and regulations consistent with this [article / chapter] and shall have all necessary powers to carry out the purpose of and enforce this [article / chapter].

COMMENT: This provision designates an agency or official to implement this ordinance and also bestows rulemaking and other powers on the agency. If existing law in a local government provides such rulemaking authority, this provision or the second sentence of the provision may be omitted.

(e) All initial planning and design studies, health impact assessments, environmental reviews, and other reviews for projects requiring funding or approval by [Local government] shall: (1) evaluate the effect of the proposed project on safe travel by all Users, and (2) identify measures to mitigate any adverse impacts on such travel that are identified.

COMMENT: This clause provides for public accountability and improved outcomes by enabling written evaluation of the effects of certain projects on safe travel as a routine consideration factoring into decision-making processes.

However, some communities may need to build momentum prior to adopting this provision. Such communities may omit this provision and substitute the alternative provision available in subsection [5(c)].

Sec. [_____ (*5)]. FURTHER STEPS.

(a) The head of each affected agency or department shall report back to the [Adopting body] [annually / within one year of the date of passage of this Ordinance] regarding: the steps taken to implement this Ordinance; additional steps planned; and any desired



actions that would need to be taken by [Adopting body] or other agencies or departments to implement the steps taken or planned.

COMMENT: Local governments are encouraged to tailor this clause to direct agencies to carry out additional specific implementation tasks as appropriate.

(b) A committee is hereby created, to be composed of [insert desired committee composition] and appointed by [the Mayor / President of adopting body / other], to forward [Local government]'s implementation of Complete Streets practices by: (i) addressing short-term and long-term steps and planning necessary to create a comprehensive and integrated transportation network serving the needs of all Users; (ii) assessing potential obstacles to implementing Complete Streets practices in [Local government]; (iii) if useful, recommending adoption of an [ordinance / amendment / internal policy / other document] containing additional steps; and (iv) proposing revisions to the [insert name of Local government's comprehensive plan equivalent], zoning and subdivision codes, and other applicable law to integrate, accommodate, and balance the needs of all Users in all Street Projects. The committee shall report on the matters within its purview to the [Adopting body] within one year following the date of passage of this Ordinance.

COMMENT: Establishing a committee is one option for implementing a local Complete Streets law; however, just as with other provisions of this ordinance, a jurisdiction can omit this provision if it is not desirable. While local considerations will dictate committee composition, local governments should consider including representatives of key departments or agencies, such as the transit agency, public works department, planning department, public health department, and others, as well as the city or county manager, advocacy groups, and a representative from the school district. Cross-department cooperation is key. Consider selecting some people with no professional transportation experience to bring fresh perspective.

SECTION III. STATUTORY CONSTRUCTION & SEVERABILITY.

 (a) This Ordinance shall be construed so as not to conflict with applicable federal or state laws, rules, or regulations. Nothing in this Ordinance authorizes any [Local Government] agency to impose any duties or obligations in conflict with limitations on local government authority established by federal or state law at the time such agency action is taken. (b) In the event that a court or agency of competent jurisdiction holds that a federal or state law, rule, or regulation invalidates any clause, sentence, paragraph, or section of this Ordinance or the application thereof to any person or circumstances, it is the intent of the Ordinance that the court or agency sever such clause, sentence, paragraph, or section so that the remainder of this Ordinance remains in effect.

COMMENT: This standard severability provision allows most of the ordinance to remain in effect even if a court deems part of the ordinance to be invalid.

(c) In undertaking the enforcement of this Ordinance, [Local government] is assuming only an undertaking to promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an obligation through which it might incur liability in monetary damages to any person who claims that a breach proximately caused injury.

COMMENT: This provision provides that no new basis for tort liability is established by the enactment of this ordinance. Local government attorneys in a given jurisdiction can assess whether this language provides adequate protection under state law, and substitute alternative language if desirable.