



Complete Streets
The Basics
 March 2015



This document is one component of the Complete Streets Toolkit, which is the result of a collaboration between the Chicago Metropolitan Agency for Planning, Active Transportation Alliance, and the National Complete Streets Coalition. The Toolkit is a guide for incorporating a Complete Streets approach into local planning, design, and construction. The entire Toolkit consists of seven components:

- 1) Complete Streets: The Basics
- 2) Policy Development and Adoption
- 3) Policy Implementation
- 4) Overall Design Concepts and Considerations
- 5) Facility Types
- 6) Select Treatments
- 7) Additional Resources

For more information and access to additional components of the Complete Toolkit, please visit the homepage at: <http://www.cmap.illinois.gov/programs-and-resources/local-ordinances-toolkits/complete-streets>.

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Complete Streets: The Basics

The National Complete Streets Coalition (NCSC) defines Complete Streets as “a transportation approach that ensures all future street projects will take into account the needs of all travelers, regardless of age, ability, or mode of transportation.”¹ Other agencies and organizations define the concept slightly differently, but all definitions emphasize that individual examples of Complete Streets projects can and will look and function differently in different neighborhoods, communities, or land use contexts.

Chicago-based Active Transportation Alliance takes a broad, holistic approach, defining Complete Streets as “a movement that brings together policy and people, networks and neighborhoods, designs, and destinations. The Complete Streets concept reclaims streets for people, reexamines the public realm, and challenges some commonly held perceptions about transportation... A Complete Streets approach combines the physical planning, design, and maintenance of infrastructure with an institutional understanding of project management, funding, and prioritization.”²

These definitions treat Complete Streets as a singular concept rather than a plural description of roadways in order to stress that Complete Streets is a way of thinking about roadways and their function in the larger contexts of multimodal transportation, land use and urban development, and society as a whole. The definitions also emphasize that Complete Streets is a transportation *network* approach. While one road or segment of road may be “complete” in and of itself, it will not achieve the objectives or realize the full benefits of Complete Streets unless it is part of larger network that accommodates all users safely and conveniently. This focus on a network approach is a reflection of both the complexity of modern travel patterns and the important and diverse roles that public rights-of-way play in our lives.

“The Complete Streets concept focuses not just on individual roads but on changing the decision-making and design process so that all users are routinely considered during the planning, designing, building and operating of all roadways. It is about policy and institutional change.”

[“Complete Streets: We Can Get There from Here”](#)

ITE Journal, Vol. 78, May 2008

(Article by John LaPlante and Barbara McCann)

Different roadway types and different contexts require different design solutions. An urban arterial, a suburban residential street, a rural byway, a downtown main street each will look different under Complete Streets. Rather than a prescriptive approach, the design elements of Complete Streets change depending upon the existing or future character of the built environment and the roadway type and function within the local land use context. Together, context and roadway type drive design.

¹ [Taking Action on Complete Streets: Implementing processes for safe, multimodal streets](http://www.smartgrowthamerica.org/documents/cs/impl/taking-action-on-cs.pdf) (July 2013); available online at <http://www.smartgrowthamerica.org/documents/cs/impl/taking-action-on-cs.pdf>.

² [Complete Streets Complete Networks: A Manual for the Design of Active Transportation](http://www.atpolicy.org/Design), available at <http://www.atpolicy.org/Design>.

History

In the post-war period, transportation planning and roadway design in the United States focused on the movement of automobiles and the needs of drivers. Many communities developed plans, enacted land use regulations, prioritized funds, built and expanded infrastructure, and designed the whole built environment around the automobile.

In the 1970s, community groups and a small number of state and local governments began to promote the idea of “routine accommodation,” in which the needs of people walking and bicycling are accounted in roadway projects. By the 1990s, the idea and the practice of accommodating pedestrians of all abilities and bicyclists were advanced on the federal level by the Americans with Disabilities Act (1990) and the Intermodal Surface Transportation Equity Act (ISTEA) of 1991. ISTEA established the current federal transportation landscape and many of its programs continue in some form today. It changed funding eligibility for bicycling and walking projects and required states to employ a dedicated bicycle and pedestrian coordinator.³

Despite the continued support for spending on bicycling and walking projects in federal transportation programs authorized in subsequent law, few states and cities routinely accommodated the needs of these modes. In 2003, national public interest organizations, advocacy groups, and professional associations gathered to broaden the scope of “routine accommodation” to better reflect the needs of all types of users. The phrase “Complete Streets” was coined. In 2005, the NCSC was officially founded. Today, the NCSC brings together professional organizations including the American Planning Association, the American Society of Landscape Architects, the Institute of Transportation Engineers, and the Association of Pedestrian and Bicycle Professionals; non-profit organizations, such as the Smart Growth America, the Alliance for Biking and Walking, and America Walks; associations including AARP, the American Public Transportation Association, and the National Association of Realtors; and a number of consultants and engineering firms who work with localities to plan and build Complete Streets. The Coalition works for the adoption and effective implementation of Complete Streets policies at the local, state, and federal levels.

While there is, at present, no federal Complete Streets policy, the concept is supported by the current administration’s Partnership for Sustainable Communities, a joint initiative of the U.S. Departments of Transportation (U.S. DOT), Housing and Urban Development, and the Environmental Protection Agency.⁴ Federal Highway Administration policy supports Complete Streets concepts and encourages the development of active transportation infrastructure at all levels of government. In 2010, U.S. DOT issued its “Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations,” which affirmed the agency’s support for

³ U.S. Department of Transportation Federal Highway Administration. “Bicycle and Pedestrian Walkways – Legislative and Policy History”

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/legislation/history_legpol.cfm.

⁴ For more about the federal partnership, visit <http://www.sustainablecommunities.gov/mission/about-us>. Complete Streets-supportive legislation has been introduced in the U.S. Congress in each session since 2005.

transportation decision-making that support the needs of people walking and bicycling and provided recommendations for how to achieve transportation networks that are “safe, attractive, sustainable, accessible, and convenient” for all users.⁵ In 2013, USDOT endorsed the use of guidance that provided additional flexibility for designing bicycle and pedestrian facilities that were appropriate for a variety of neighborhood contexts: including AASHTO’s *Guide for the Development of Bicycle Facilities* (2012, Fourth Edition), NACTO’s *Urban Bikeway Design Guide*, and ITE’s *Designing Walkable Urban Thoroughfares: A Context-Sensitive Approach*.⁶

The Complete Streets movement is growing steadily across the country. As of the end of 2013, more than 600 U.S. jurisdictions, at all levels of government, had Complete Streets policies in place.⁷ These policies take many forms: legislation (ordinances and statutes), resolutions, executive orders, departmental policies, policies adopted by an elected board, plans, and design guidance that supports Complete Streets or incorporates Complete Streets principles.

⁵ http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm

⁶ <http://www.fhwa.dot.gov/pgc/results.cfm?id=5333>.

⁷ See *The Best Complete Streets Policies of 2013*. <http://www.smartgrowthamerica.org/documents/best-complete-streets-policies-of-2013.pdf>.

Timeline: Complete Streets



Source: Chicago Metropolitan Agency for Planning.

Benefits

Complete Streets can improve resident quality of life in very specific ways. Cost savings in a walkable neighborhood accrue to residents as well as local governments. More time spent walking or biking has enormous health benefits. Studies have found that children who walk or cycle to school “perform measurably better on tasks demanding concentration.”⁸

Recent opinion polls found that 66 percent of Americans want more transportation options, yet 73 percent feel they have no choice but to drive as much as they do.⁹ Many of our streets are incomplete, offering mediocre conditions for people walking, biking, or using transit—meaning many people really do not have the choice but to drive. Changing policy so that our transportation system routinely includes the needs of pedestrians, transit users, or bicyclists will give people of all ages and abilities more options when traveling.¹⁰

“For communities concerned with public health, safety, welfare, and long term sustainability, a Complete Streets transportation approach should be considered essential, not an option.”

Michigan Planner, “[Mobility for All Users: Complete Streets.](#)”
(Article by Brad Strader, LSL Planning, Inc.)

Safety

Most roads built in the post-war period were designed to ensure drivers’ safety. But drivers adjust to their environment, and when roads are designed to be safe for drivers traveling 40 mph, drivers are more likely to travel at an increased rate of speed despite a lower posted speed limit.¹¹ Roadway *improvements* often widen streets to improve the flow of cars, but wide roads can make people feel comfortable driving faster, leading to unsafe habits.

People are at risk when streets are planned and designed without safe places to walk, cross, catch a bus, or bicycle. More than 4,500 pedestrians die on U.S. roads each year, and more than 67,000 are injured.¹² Pedestrian crashes are more than twice as likely to occur in places without

⁸ Goodyear, Sarah. “The Link Between Kids Who Walk or Bike to School and Concentration.” The Atlantic Cities. Feb 5, 2013. <http://www.theatlanticcities.com/commute/2013/02/kids-who-walk-or-bike-school-concentrate-better-study-shows/4585/> Accessed: 3/21/14.

⁹ Future of Transportation survey, Transportation for America

¹⁰ For more information on the benefits of Complete Streets, see the National Complete Streets Coalition Fact Sheets on benefits at <http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/factsheets>, from which the following text was taken.

¹¹ Speck, Jeff. *Walkable City: How Downtown Can Save America, One Step at a Time*. North Point Press: New York, 2012.

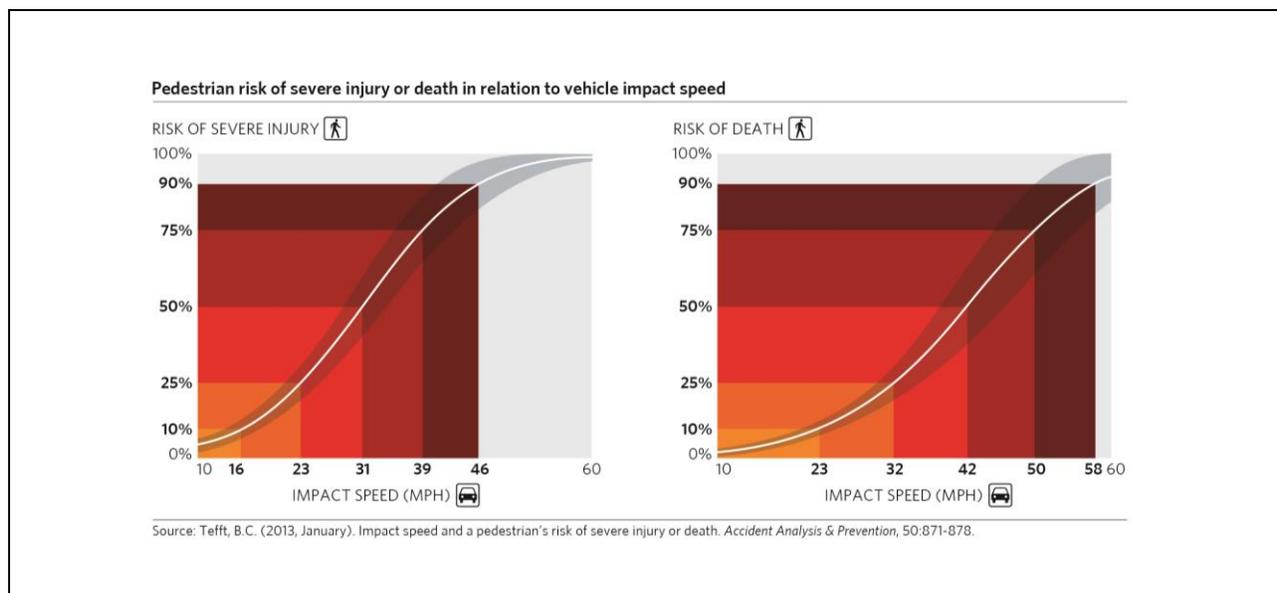
¹² Smart Growth America (2014). *Dangerous by Design 2014*.

<http://www.smartgrowthamerica.org/documents/dangerous-by-design-2014/dangerous-by-design-2014.pdf>

sidewalks; streets with sidewalks on both sides have the fewest crashes.¹³ Of pedestrians killed between 2003 and 2012, more than 50 percent died on arterial roadways.¹⁴ More than 40 percent of pedestrian fatalities between 2000 and 2009 occurred where no crosswalk was available.¹⁵



As the chart below shows, the risk of severe pedestrian injury and death rises quickly with increasing vehicle speeds. A pedestrian struck by a vehicle driven at 20 mph has around a 15 percent chance of being severely injured and a 5 percent risk of death. At 30 mph, these risks rise to around 50 percent for severe injury and 25 percent for death, and at 45 mph, 90 percent and 60 percent, respectively. At speeds above 50 mph, a pedestrian has almost no chance of escaping grievous injury or death.¹⁶



¹³ Campbell, B., et al. (2004). "A Review of Pedestrian Safety Research in the United States and Abroad." Federal Highway Administration Publication # FHWA-RD-03-042

¹⁴ Smart Growth America (2014), op. cit.

¹⁵ Ernst, M. (2011). *Dangerous by Design 2011*. Transportation for America.

¹⁶ Tefft, B.C. (2013, January). Impact speed and a pedestrian's risk of severe injury or death. *Accident Analysis & Prevention*, 50:871-878

While the human cost of losing a family member or friend in a traffic collision is unquantifiable, crash investigations and resulting traffic jams are demonstrably expensive. According to the auto club AAA, the cost of a single motor vehicle fatality is \$6 million, the total cost of crashes in urbanized areas in 2009 was nearly \$300 billion, and the annual cost of crashes per person is \$1,522.¹⁷ Fewer crashes can save communities enormous amounts of money.

Complete Streets practices reduce crashes through comprehensive safety improvements and the use of proven safety countermeasures that recast the entire right-of-way (ROW) with pedestrians, including transit users, in mind. Well-designed bicycle infrastructure discourages sidewalk riding and reduces bike crashes by large margins. The design and engineering approaches commonly found in Complete Streets create long-lasting speed reduction. Speed plays a role in 30 percent of *all* traffic crashes, so all road users benefit from slower speeds that are appropriate for streets serving neighborhoods and communities.

Economy

In *Walkable City*, Jeff Speck describes what he calls the “Walkability Dividend,” using Portland, Oregon as an example. Decades of investments in Complete Streets have created a city where people drive 20 percent less than other major metropolitan areas, saving Portlanders \$1 billion annually.¹⁸ Since nearly 85 percent of car and fuel expenses leave the local economy,¹⁹ the billions of dollars saved are staying in Portlanders’ pockets and are more likely to be spent locally.

For households: Transportation is the second most-costly item in most household budgets. Providing safe and convenient options for walking and bicycling can help households cut transportation costs by thousands of dollars a year.

For businesses: Local businesses benefit from the increased exposure generated by more pedestrian and bicycle activity and slower-moving automobile traffic. Giving people more options for getting to commercial areas can help reduce regional traffic congestion and boost sales and employee retention by providing improved access to employment centers.

For communities: Complete Streets can spur private investment with an impressive rate of return. Communities across the country have multiplied the impact of their revitalization efforts including well-designed multimodal streets in economic development plans. Well-connected, walkable and bikeable neighborhoods—especially those with good transit access—maintain property values better than areas without these features. Households that spend less on

¹⁷ Cambridge Systematics, Inc. “Crashes vs. Congestion—What’s the Cost to Society?” Study prepared for AAA, November 2011. http://newsroom.aaa.com/wp-content/uploads/2011/11/2011_AAA_CrashvCongUpd.pdf. USA Today. <http://usatoday30.usatoday.com/news/nation/story/2011-11-02/fatal-vehicle-crashes-cost-millions/51051030/1>

¹⁸ Speck, Jeff. *Walkable City: How Downtown Can Save America, One Step at a Time*. North Point Press: New York, 2012.

¹⁹ *Ibid*, p. 29.

transportation have more income available for housing, shopping, and entertainment, keeping more money circulating locally.

Complete Streets are crucial to economic competitiveness. More Americans are attracted to places that offer the street life and transportation choices that auto-oriented places cannot provide. These factors play a major role when people are searching for jobs and places to live.²⁰

Age and disabilities

Many roads do little to meet the needs of the growing population of older adults and people with limited mobility.²¹ On many incomplete streets, long crosswalks, expansive intersections, absent sidewalks, missing curb cuts, and poor transit stops limit safe mobility and contribute to isolation among individuals who do not drive. Complete Streets, on the other hand, improve travel options for people of all ages and abilities.

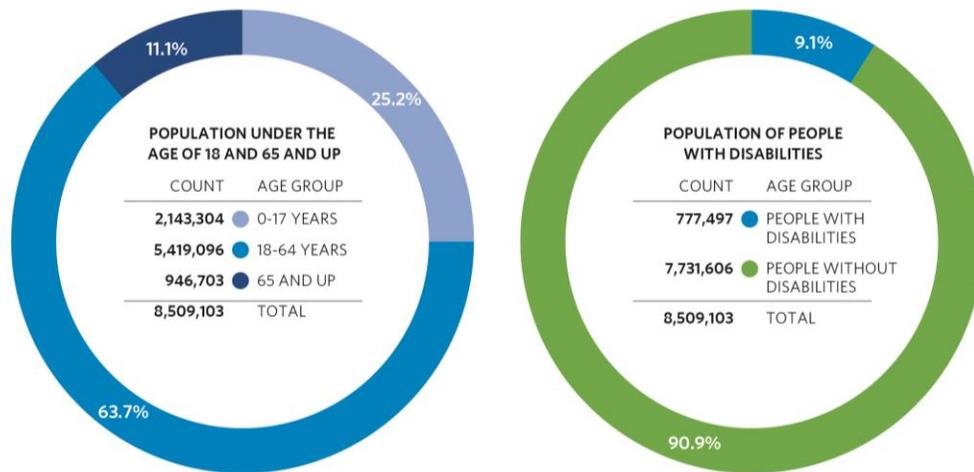
In northeastern Illinois, 2010 Census data show that the senior population (residents who are 65 years of age or older) has grown 8.8 percent in the past decade, from 875,534 to 952,718 residents, more than double that of the region's overall population increase. According to GO TO 2040, the number of residents between 65 and 84 years of age is projected to double by 2040. Furthermore, the number of residents in the region who are over 85 years old is projected to triple.²²

²⁰ For additional studies on the economic benefits of Complete Streets, see the PDF version – including studies referenced in footnotes – of the National Complete Streets Coalition Fact Sheet on the potential for Complete Streets to stimulate local economies, at <http://www.smartgrowthamerica.org/documents/cs/factsheets/cs-economic.pdf>. See also the New York City DOT report, “The Economic Benefits of Sustainable Streets,” at <http://www.nyc.gov/html/dot/downloads/pdf/dot-economic-benefits-of-sustainable-streets.pdf>. Finally, see the “Special Section: The Economic Benefits of Complete Streets” at http://vibrantneo.org/wp-content/uploads/2014/03/VibrantNEO_EconomicBenefitsofCompleteStreets.pdf, which is part of Northeast Ohio’s Sustainable Communities Consortium Initiative’s “Vibrant NEO 2040” report.

²¹ AARP is a founding member of and remains on the steering committee of the National Complete Streets Coalition. In 2009, AARP released the important report, “Planning Complete Streets for an Aging America, which “encourages transportation planners and decision makers to build upon the principles of Complete Streets to address the specific needs of older drivers and pedestrians.” The report argues that “Adoption of these principles ultimately improves the safety for all road users.” The report is available online at assets.aarp.org/rgcenter/ppi/liv-com/2009-12-streets.pdf. More recently, AARP, as part of its Livable Communities initiative, published “The Road Ahead: Implementing Complete Streets Policies,” which offers case studies of successful implementations of Complete Streets policies by AARP state offices. Available online at <http://www.aarp.org/content/dam/aarp/home-and-family/livable-communities/2014-01/complete-streets-case-study.pdf>.

²² For more information, see http://www.cmap.illinois.gov/about/updates/-/asset_publisher/UIMfSLnFfMB6/content/new-u-s-census-data-analysis-overview-of-trends-in-the-senior-population.

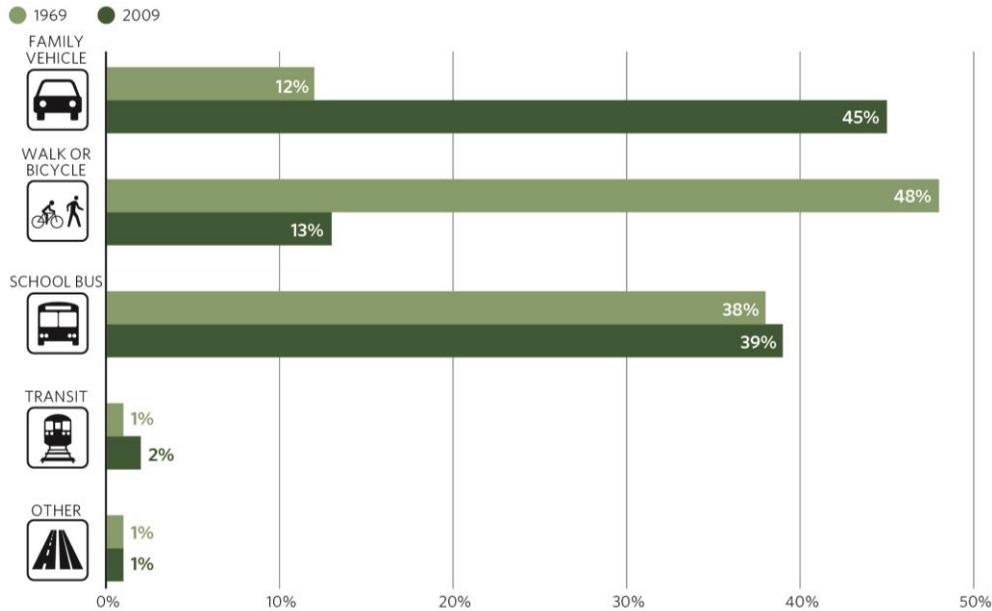
Children, older adults, and people with disabilities in the Chicago Metropolitan Area



Source: US Census Bureau, 2008-12 American Community Survey.

Complete Streets also helps create a safer environment for children to walk and bike to school, friends' houses, and other activities. The number of children who travel on their own to school dropped by almost three-quarters between 1969 and 2009 nationwide—and the rates of childhood inactivity and obesity took off. By giving parents and children more options for getting around safely, Complete Streets enable children to live the active lifestyles they need to be healthy.

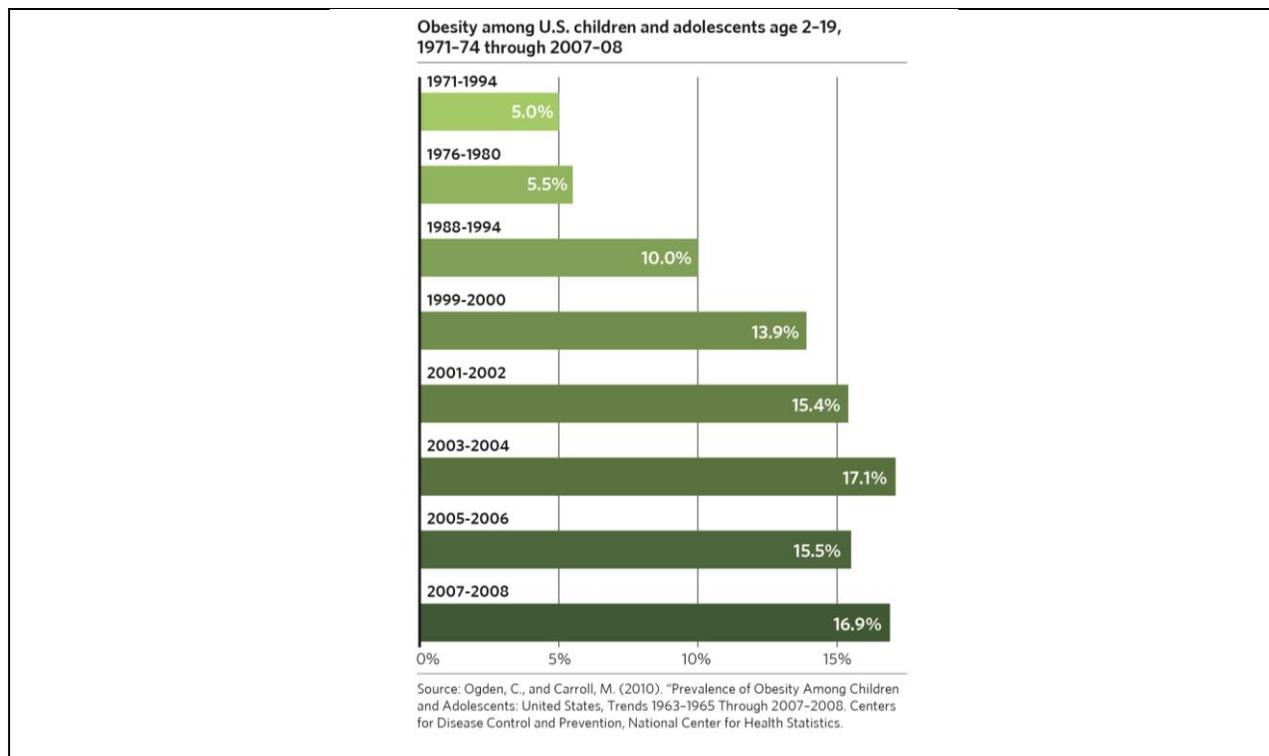
Usual mode of travel to school for K-8 students, 1969-2009



Source: National Center for Safe Routes to School (2011). *How Children Get to School: School Travel Patterns from 1969 to 2009*.

Health

Walking and bicycling on streets designed only for cars can feel unpleasant and unsafe, leading people to forego active transportation in favor of driving. On a daily basis, each additional hour spent driving is associated with a six percent increase in the likelihood of obesity, while each additional kilometer walked is associated with a five percent reduction in this likelihood.²³



Complete Streets provide opportunities for increased physical activity by ensuring streets are designed for active transportation. One study found that people in walkable neighborhoods did about 35-45 more minutes of moderate intensity physical activity per week and were substantially less likely to be overweight or obese than similar people living in low-walkability neighborhoods.²⁴ Nearly one third of transit users meet the Surgeon General's recommendations for minimum daily exercise through their daily travels.²⁵

Public Transportation

Great public transportation systems go hand-in-hand with great places for walking and bicycling. Though nearly every transit trip begins as a walking trip, disconnects between transit and road planning can leave riders to wait in uncomfortable or unsafe conditions or unable to access a stop or a station.

²³ Frank, L.D., Andresen, M.A., and Schmid, T.L. (2004). "Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars." *American Journal of Preventative Medicine* 27:2.

²⁴ Sallis, James F, et al. (2009). "Neighborhood built environment and income: Examining multiple health outcomes." *Social Science and Medicine* 68:1285-1293

²⁵ Besser, L. M. and A. L. Dannenberg. (2005). "Walking to public transit: Steps to help meet physical activity recommendations." *American Journal of Preventive Medicine* 29(4): 273-280.

Complete Streets makes accessing transit safer, more convenient, and more comfortable by ensuring that transit stops are accessible along a connected, ADA-compliant sidewalk network and are near good crossing locations. Complete Streets also means keeping buses moving efficiently through traffic efficiently. Improving access to fixed-route transit also reduces dependence on more costly alternatives, such as paratransit or private transportation services. And better bicycle accommodation—on the streets, at stops, and on transit vehicles—helps increase the effective range of transit services.²⁶

Equity

The negative effects of incomplete streets disproportionately impact people of color. The national pedestrian fatality rate for Hispanics is almost 45 percent higher than the rate for whites, and the rate for African Americans is 60 percent higher than for whites. Despite representing less than 13 percent of the U.S. population, African Americans account for 17 percent of pedestrian deaths.²⁷ African American and Latino children riding in cars are also more likely to be killed than white children per vehicle mile traveled.²⁸ In counties where more than 20 percent of households have incomes below the federal poverty line, the pedestrian fatality rate is over 80 percent higher than the national average.

Low-income Americans are more likely to take transit than their middle-income peers²⁹ and more likely to bike for transportation,³⁰ and low-income children in urban areas are more likely to walk or bike to school.³¹ Complete Streets ensure that the transportation system provides for the needs of all users regardless of race, income, age, or disability. Like other public places, streets cannot discriminate on the basis of any of these factors. Complete Streets, therefore, help communities ensure that the letter and the spirit of the law coincide and work together.

Place

Streets and other transportation elements represent a significant percentage of publicly owned land. In automobile-oriented development, the public ROW typically makes up 20 to 40 percent

²⁶ Pace Suburban Bus recently published “Transit Supportive Guidelines.” The guidelines include information on road and roadside design treatments that provide accessibility for transit facilities and users. The guidelines are available online at <http://pacebus.com/guidelines/index.asp>. In addition, see the NCSC’s webpage on Complete Streets at <http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/factsheets/public-transportation/>

²⁷ Smart Growth America (2014), *op. cit.*

²⁸ Gantz, T., Shaver, B., De La Garza, E., Ragland, D. & Cohen, L. (2003, November). “Traffic safety in communities of color.” UC Berkeley Traffic Safety Center paper UCB-TSC-RR-2003-05.

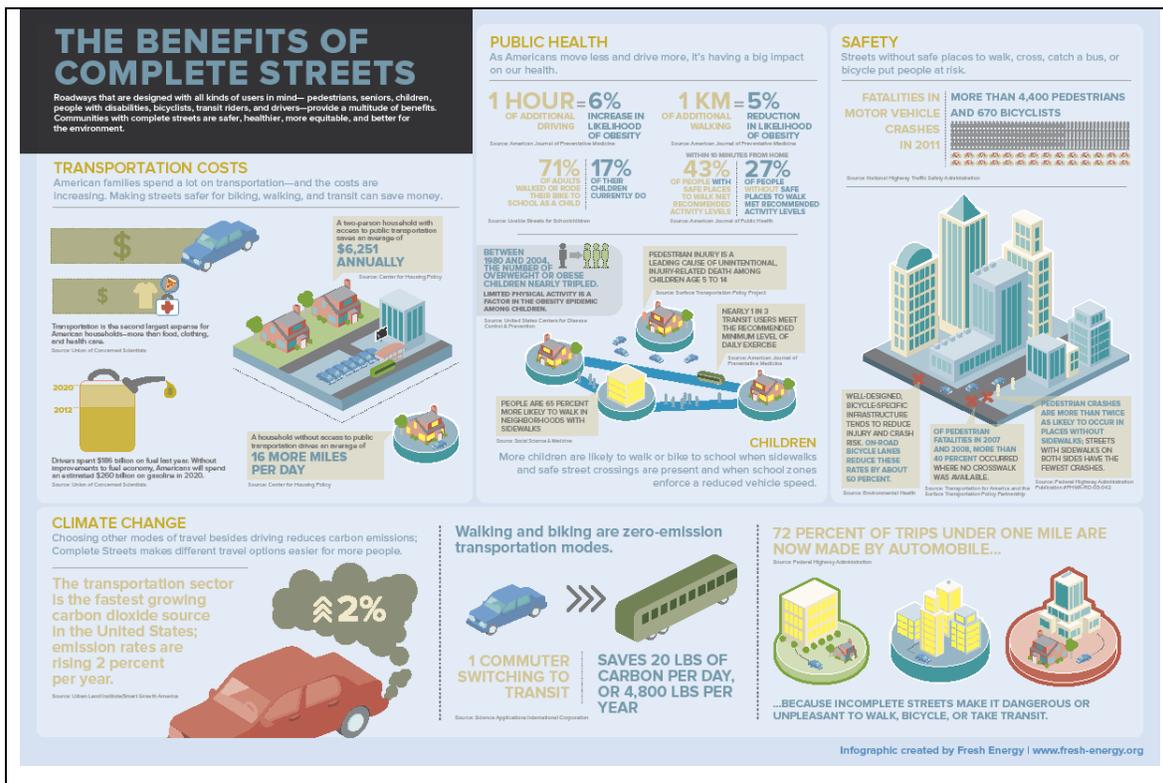
²⁹ Sanchez, T., Stolz, R., & Ma, J. (2003). Moving to equity: Addressing inequitable effects of transportation on minorities. Retrieved from <http://civilrightsproject.ucla.edu/research/metro-and-regional-inequalities/transportation/moving-to-equity-addressing-inequitable-effects-of-transportation-policies-on-minorities/>.

³⁰ Pucher, J. & Buehler, R. (2011, March). “Analysis of bicycle trends and policies in large North American cities: Lessons for New York.” Retrieved from <http://www.utrc2.org/research/assets/176/Analysis-Bike-Final1.pdf>.

³¹ Young, S. (2011, July 4). “Who’s walking to school?” Retrieved <http://thechart.blogs.cnn.com/2011/07/04/whos-walking-to-school/>

of land use in urbanized areas.³² Off-street parking can take up another 10 to 20 percent of land use, but some downtowns have dedicated as much as 30 percent of their land area for surface parking.³³ Neighborhoods that are less automobile-oriented may dedicate as little as 10 percent of land to the public ROW.

A Complete Streets approach to roadway planning and design provides the opportunity for communities to re-envision their streets as more than just conduits and storage space for automobiles. With Complete Streets, transportation planning, design, and operations become a means of achieving community-wide goals and of maximizing the potential of public space. Complete Streets allows communities to see their streets as public places and vital parts of their towns, where people not only move through, but also interact with each other. This connection of people and place provides the most compelling argument for the need for Complete Streets.³⁴



³² Elizabeth Macdonald, “Wasted Space/Potential Place: Reconsidering Urban Streets,” *Places: Forum of Design for the Public Realm* 19:1 (2007): 22-27. Macdonald estimates that “... streets generally occupy between 25 and 35 percent of all land in American Cities.” Authors of the CH2M Hill white paper, “Sustainable Urban Street Design and Assessment,” estimate that “Between 25 and 40 percent of all land within urban areas is in the public streets right-of-way.” (p. 3). City of Chicago DOT staff estimates that 23% of city land is in the public right-of-way (see Slide 3 of [CDOT presentation](#))

³³ Parking Strategies to Support Livable Communities, <http://www.cmap.illinois.gov/programs-and-resources/local-ordinances-toolkits/parking>.

³⁴ For more on creating place, see the Project for Public Spaces: <http://www.pps.org/references/streets-as-places-how-transportation-can-create-a-sense-of-community/>.

Synergies with other planning approaches

Complete Streets, as an approach to transportation planning, shares the broad, guiding principles of other contemporary planning movements, including smart growth, context-sensitive solutions, transit-oriented development, speed management, transportation demand management, and active transportation. Their guiding principles include broad concepts such as livability, sustainability, equity, improved public health, fiscal responsibility, and the long-term prosperity of communities. All these movements address the need to better integrate land use and transportation planning and to make travel safe, convenient, and affordable.

The following are key tenets of Complete Streets:

1. Current and future land use in surrounding areas should be the primary determinant of roadway design.
2. Roadways should be designed, built, and operated to serve multiple travel modes and the needs of all anticipated users.
3. Streets are public *places* that often must simultaneously serve multiple functions, including mobility, commerce, recreation, and community.

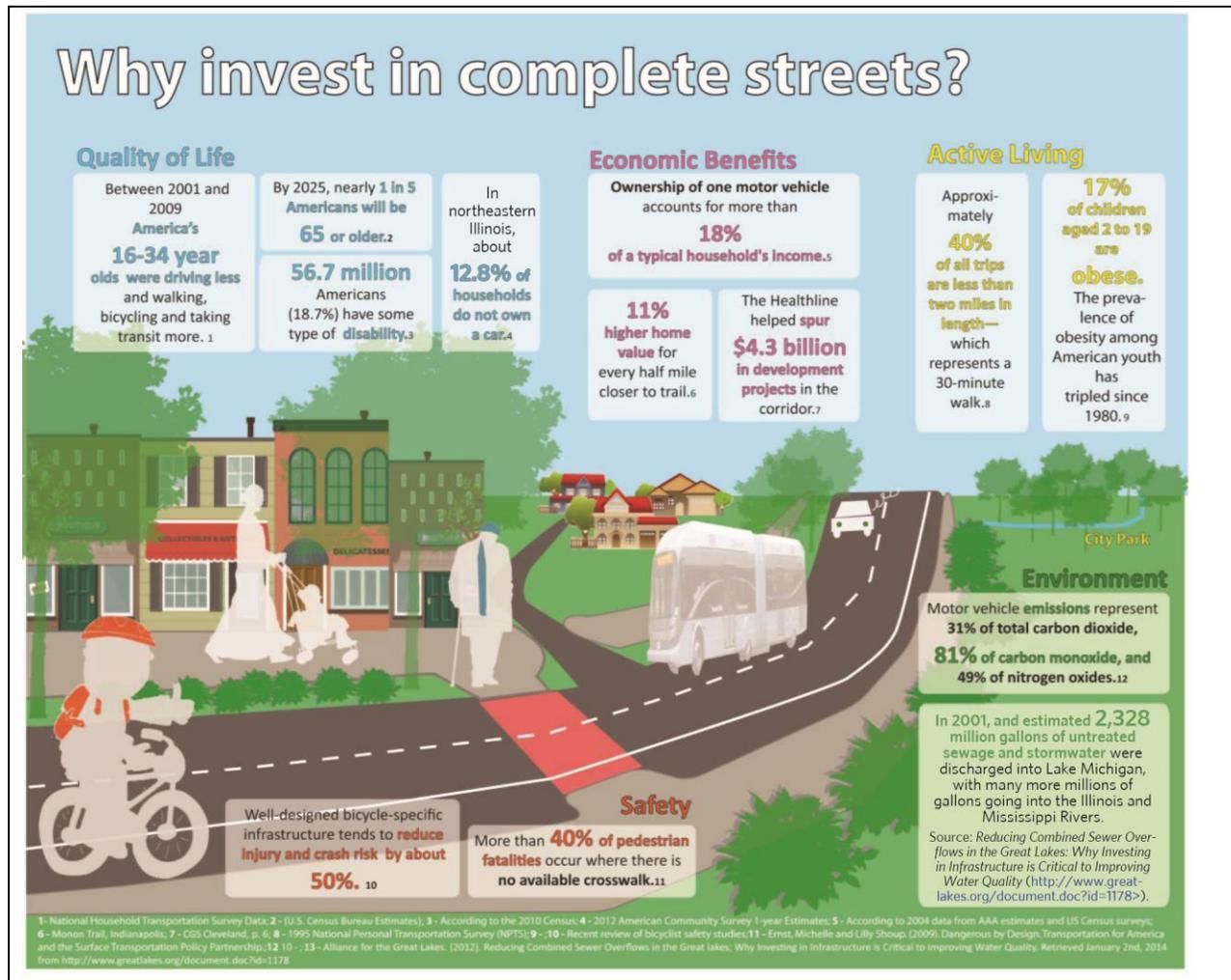
Complete Streets represents a new transportation planning paradigm that prioritizes multimodal access to destinations.³⁵ This paradigm contrasts with conventional transportation planning's prioritization of automobile mobility.

Conventional Versus Multimodal Transportation Planning		
	Conventional (Automobile-focused) Transportation Planning Paradigm	Complete Streets (Multimodal) Transportation Planning Paradigm
Definition of "transportation"	<i>Mobility</i> – physical travel (primarily motor vehicle travel)	<i>Accessibility</i> – people's ability to reach desired services and activities
Planning goals	Maximize travel speeds	Maximize overall accessibility
Transportation system performance indicators	Roadway level-of-service (LOS), average traffic speed, congestion delay	Multimodal LOS, time and money required by various people to access services and activities
Roadway design priority	Maximize vehicle traffic speeds and volumes	Accommodate multiple modes and activities
Typical design speed	30-50 mph	20-30 mph
Roadway network type	Hierarchical with low connectivity	Highly connected roads and sidewalks
Design vehicle	Largest vehicle in use	Average or typical vehicle in use
Approach to safety	Crashes per VMT, aggregated for all users; functional separation; limited access; 'forgiving' road design	Safety <i>per mode</i> . Reduces crash incidence and severity through speed reduction and ped-scaled design

Adapted from "Evaluating Complete Streets," Table 1 (Litman, 2013)

³⁵ This section, and the table above, are drawn from an article by Todd Litman, "Evaluating Complete Streets: The Value of Designing Roads for Diverse Modes, Users, and Activities," Victoria Transportation Policy Institute, 2013.

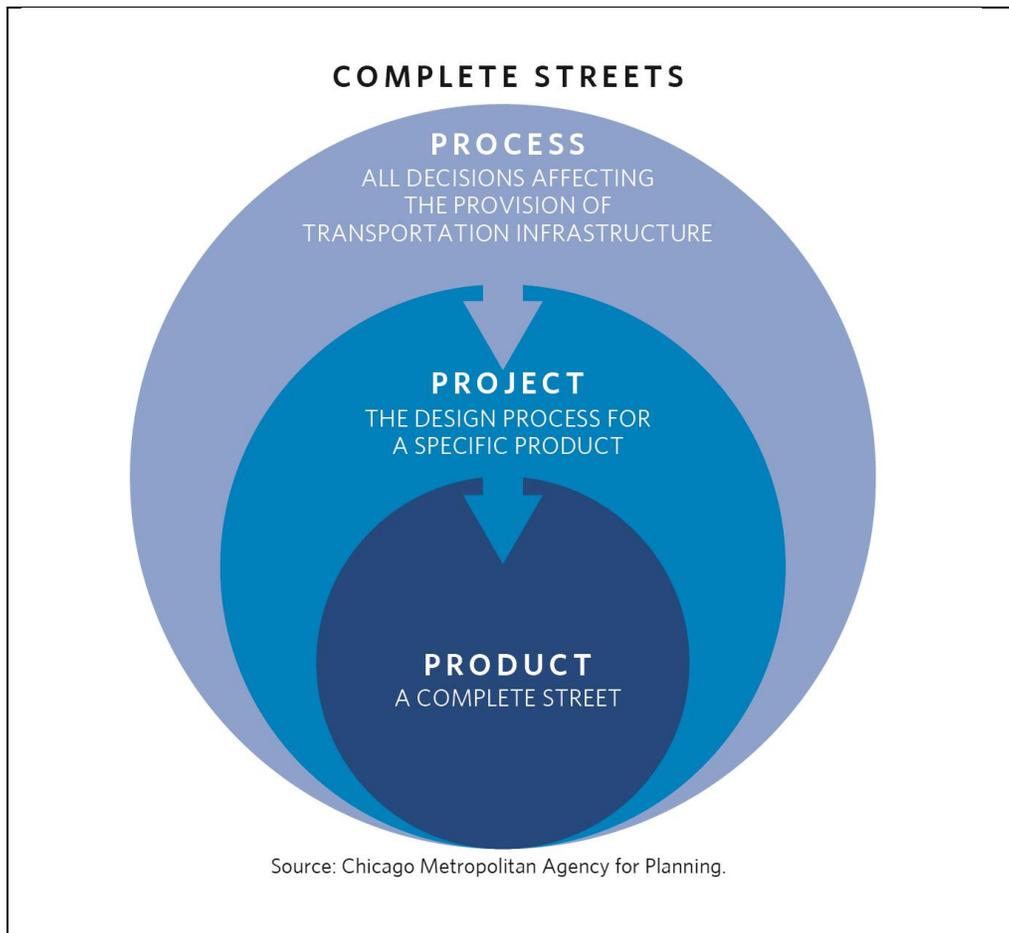
Conventional transportation planning and design maximizes motor vehicle traffic speeds and minimizes motor vehicle traffic delay. Complete Streets and other integrated, multimodal approaches recognize that the conventional approach can have negative impacts for travel by other means, particularly within local communities. For example, wide, high-speed roads can become major barriers to walking or cycling; hierarchical roadway patterns can reduce connectivity and limit the viability of other travel modes; and destinations that are designed to be accessible by automobile can be difficult to access by other modes. Complete Streets seeks to balance the needs of all users and to maximize access for all modes in highlighting the important role that walking, cycling, and public transportation must play in any efficient, modern, and sustainable transportation system.



Policies, procedures, and projects

The development of a robust and effective Complete Streets policy and successful implementation depend upon a full understanding of the complex, multifaceted way that transportation planning, programming, design, maintenance, and operations occur in a community. All of the major steps involved in the provision of transportation infrastructure—from long-range and capital improvement planning to project engineering, construction, and

maintenance—comprise many specific policies, procedures, and processes, which must be fully understood and reviewed to ensure that they support Complete Streets.³⁶



Complete Streets is both a product and a process. As a product, Complete Streets is straightforward—it is the engineer’s design and the construction of a particular street to accommodate all anticipated users. The product the end result of a project. The product, and the project are the result of the project development and delivery process.³⁷ Such processes are complex and typically include both well-defined decision points and formal, standardized processes, as well as informal, ad-hoc decisions and processes. Decisions that occur at different points in time and are made by variety of agencies, departments, or individuals with goals that can be distinctly different from or at odds with one another adds to the complexity of the project development process.

³⁶ See the Alliance for Biking & Walking, *Guide to Complete Streets Campaigns* (3rd Edition, 2010) for more on this.

³⁷ We discuss the role and importance of changing process in greater detail in the chapter, below, on “Implementation”.

The infographic above is intended to illustrate the wide range of documents, procedures, and processes – including deeply ingrained routines and habits – that may be involved in Complete Streets implementation. These “inputs” into the transportation decision-making process range from written to unwritten; from legally binding to flexible; and from well-defined to open-to-interpretation.

Understanding the individual steps and factors that constitute the project development and delivery processes is essential to implementing a Complete Streets policy. The NCSC calls for agencies and communities to focus “on creating culture change, process change, and reprioritization” within the profession of transportation planning and engineering.³⁸ The change consists of redefining the basic problem that transportation planners and engineers are asked to address. The problem to be solved is no longer how to move cars at the highest safe speed, but rather how to provide safe and convenient access and mobility for all anticipated users.³⁹

The Complete Streets approach redefines what a street is and what it should do. It characterizes public rights-of-way in developed areas as fundamentally multimodal, and as playing a larger, place-making and community-building role in cities and neighborhoods. Implementing a Complete Streets policy typically involves making changes to long-standing transportation decision-making processes and to planning and design practices that favor automobile travel.

³⁸ National Complete Streets Coalition, ‘Understanding the Complete Streets Approach,’ <http://www.smartgrowthamerica.org/complete-streets/changing-policy/model-policy#approach>; and ‘Changing Procedure and Process,’ <http://www.smartgrowthamerica.org/complete-streets/implementation/changing-procedure-and-process>

³⁹ Ibid



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