Complete Streets from Policy to Project

The Planning and Implementation of Complete Streets at Multiple Scales

Final Report 2013-30

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Authors:
Carissa Schively Slotterback, PhD, AICP
Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

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16. Abstract (Limit: 250 words)

Complete streets is emerging as an influential movement in transportation planning, design, and engineering. This guidebook, with accompanying case studies, explores the variety of ways in which complete streets is conceptualized and institutionalized by various jurisdictions. It offers practical and applicable insights for jurisdictions in Minnesota and elsewhere. The research focused on best practices in 11 locations across the nation: Albert Lea, Minnesota; Arlington County, Virginia; Boulder, Colorado; Charlotte, North Carolina; Columbus, Ohio; Dubuque, Iowa; Fargo-Moorhead, North Dakota/Minnesota; Hennepin County, Minnesota; Madison, Wisconsin; New Haven, Connecticut; and Rochester, Minnesota. The guidebook is informed by an analysis of multiple data sources from each jurisdiction. The authors conducted a review of key documents (e.g., plans, policies, design guidelines), site visits, photo documentation, and in-depth interviews with more than 100 key informants. Six best practice areas emerged through the analysis: (1) framing and positioning, (2) institutionalizing complete streets, (3) analysis and evaluation, (4) project delivery and construction, (5) promotion and education, and (6) funding. The six best practice areas are described in detail and illustrated by examples from the case locations. The guidebook concludes with an appendix of complete streets case reports that offer additional details about each of the 11 case jurisdictions.

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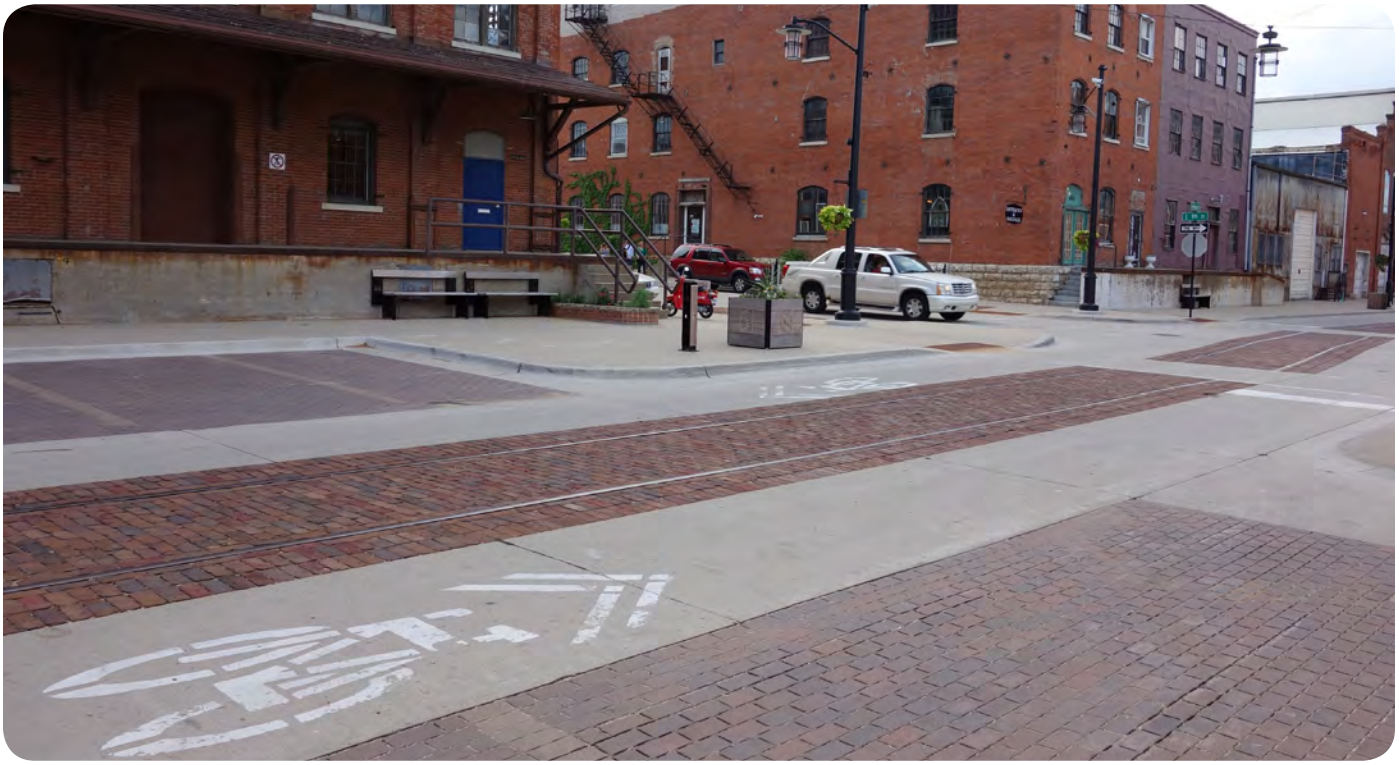

Historic Millwork District in downtown Dubuque.

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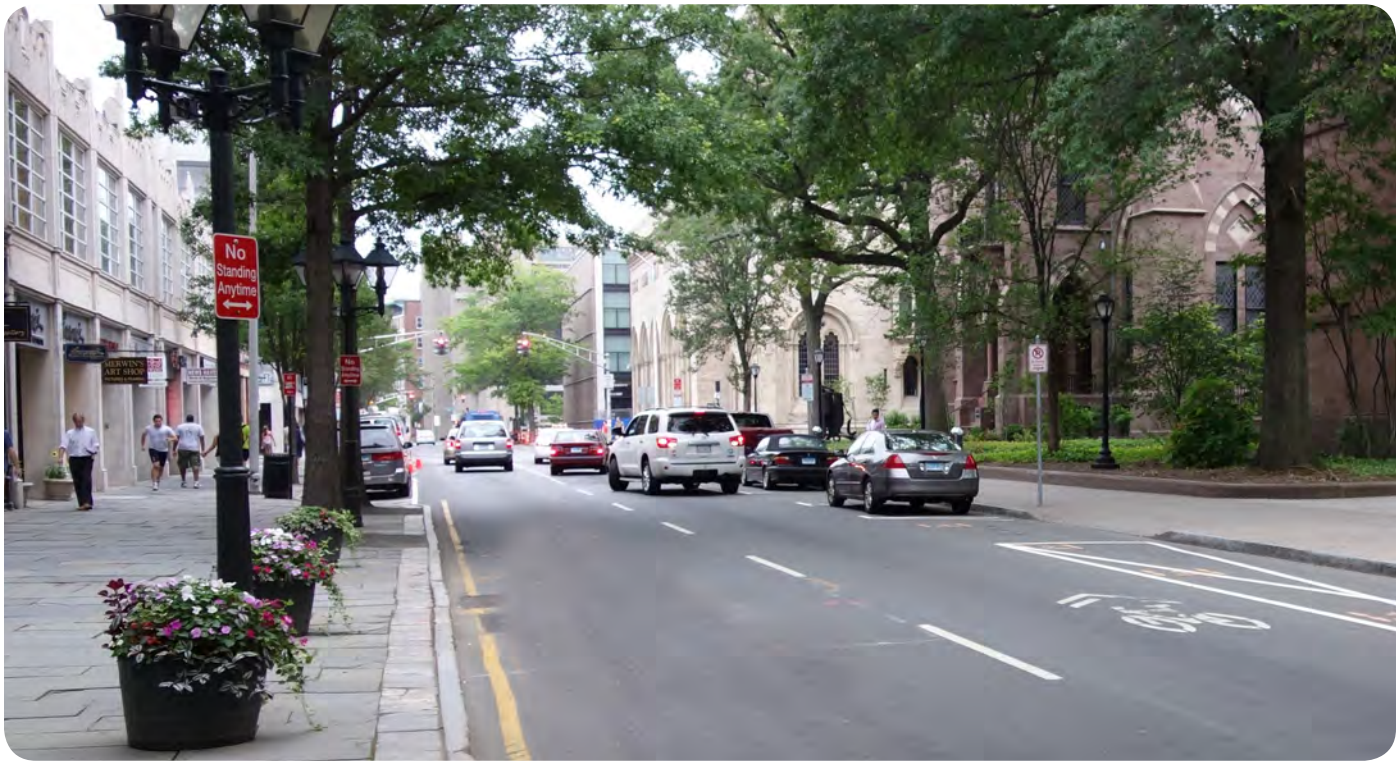


Downtown New Haven, Connecticut.

Introduction

Complete streets is emerging as an influential movement in transportation planning, design, and engineering in a wide range of cities, counties, and regions. This movement calls for a more comprehensive consideration of the full range of modes and users in the system. As a practice emerges around complete streets, we have a critical opportunity to explore the variety of ways in which complete streets interest emerges in jurisdictions and how the concept becomes institutionalized in day-to-day practice.

While complete streets definitions vary across communities agencies based on local priorities and contexts, most focus on considering multiple modes, accounting for the varying interests of users, and advancing a safer and more accessible transportation system. This definition of complete streets from the State of Minnesota offers an example:

> *Complete streets is "the planning, scoping, design, implementation, operation, and maintenance of roads in order to reasonably address the safety and accessibility needs of users of all ages and abilities. Complete streets considers the needs of motorists, pedestrians, transit users and vehicles, bicyclists, commercial and emergency vehicles moving along and across roads, intersections and crossings in a manner that is sensitive to the local context and recognizes that the needs vary in urban, suburban, and rural settings." (MN State Statutes 2012, §17.75, Sub. 1)*

A busy intersection in Boulder incorporates a change in materials and striping in key pedestrian areas.

With the growing interest in complete streets, we are seeing an increasing number of examples of jurisdictions that are moving from complete streets plans and concepts to constructing projects. In each organization and jurisdiction, this move from idea to project looks different. This guide explores the space between initiating complete streets and the construction of one or more complete streets projects. We explore 11 national cases from a variety of jurisdictional and geographic contexts that have constructed complete streets projects. In some cases, these jurisdictions have been doing work in multi-modal transportation for decades that has since evolved into complete streets.

This case-based analysis draws on over 100 interviews with a wide range of community and project stakeholders. It explores a diverse set of perspectives on what it takes to be successful in implementing complete streets. The study explores policy, process, design, maintenance, and funding approaches. In addition, the analysis reveals broader issues of institutional and cultural change that are laying the groundwork in many communities for a reconsideration of the transportation system.

This study is intended to produce practical and usable insights and best practices for jurisdictions in Minnesota and elsewhere. It is supported by funding from the Minnesota Department of Transportation and the Local Road Research Board, both of which are working to advance complete streets practices.

We developed this practitioner-oriented guidebook to respond to these interests and to offer insights into the state of the practice in complete streets. In the upcoming section, the guide puts this study in the context of previous complete streets and associated efforts around context sensitive solutions. This background section also highlights key resources for practitioners in Minnesota and elsewhere. Next, we offer a discussion of the methodology for the study, highlighting a rigorous case-based analysis that generated deep knowledge of practice in the 11 case jurisdictions. Finally, we conclude with a discussion of best practices, which highlights examples from the wide range of jurisdictions in the study. The best practices are organized into six categories, including: (1) framing and positioning, (2) institutionalizing complete streets, (3) analysis and evaluation, (4) project delivery and construction, (5) promotion and education, and (6) funding. In presenting key practice examples in each of these categories, we offer deep detail about the practice but also critical aspects of the organizational and jurisdictional context. This approach to presenting the best practices ensures that readers acquire knowledge of a wide set of practices, but also gain insight into the approaches that might be best for their particular context.

This Guide to Complete Streets Planning and Implementation concludes with an appendix of complete streets case studies that offer details about each of the 11 case jurisdictions. The case study reports highlight key findings and unique aspects of each case, summarize relevant complete streets documents (e.g. policies, plans, decision rubrics), offer a chronological overview of the evolution of a complete streets program in the case jurisdiction, and illustrate implementation via images of completed projects and their community context.

The 12-block Historic Millwork District in Dubuque incorporates complete streets features.

Background

Overview of the Literature

As the complete streets movement has gained momentum over the past ten years there has been a growing amount of research and writing on the subject. Resources range from technical papers geared toward researchers and practitioners to more general articles targeted toward a more public audience with varying levels of knowledge in transportation, planning, and design. This section provides a brief overview of the types and focus of resources available nationally and locally in Minnesota.

Complete streets resources authored by academics and practitioners cover a wide range of topics in the areas of policy development, planning, design, implementation, and evaluation. While our review of this literature focuses specifically on complete streets, it is important to note that there is a broader body of literature that examines particular aspects of complete streets such as bicycle, pedestrian, and transit infrastructure needs and their relationship to safety, economy, health, and the environment.

The Scaleybark station on the LYNX line in Charlotte includes design features that facilitate safe access from the train platform to the adjacent park and ride facility.

Many authors articulate a connection between complete streets with the transportation approach known as Context Sensitive Solutions (CSS) (Bradley 2010, LaPlante & McCann 2008, LaPlante & McCann 2011, McCann & Rynne eds. 2010, Rosales & Sousa 2010, Smith et al 2011). The Federal Highway Administration (FHWA) describes Context Sensitive Solutions as:

> *A collaborative, interdisciplinary, holistic approach to the development of transportation projects. It is both process and product, characterized by a number of attributes. It involves all stakeholders, including community members, elected officials, interest groups, and affected local, state, and federal agencies. It puts project needs and both agency and community values on a level playing field and considers all trade–offs in decision making. Often associated with design in transportation projects, Context Sensitive Solutions should be a part of all phases of program delivery including long range planning, programming, environmental studies, design, construction, operations, and maintenance. (source: FHWA Context Sensitive Solutions website)*

Smart Growth America's National Complete Streets Coalition's definition of complete streets illustrates the importance of context in complete streets approaches:

> *There is no singular design prescription for Complete Streets; each street is unique and responds to its community context. Roadways that are planned and designed using a Complete Streets approach may include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more.*
>
> *A "complete" street in a rural area will look quite different from a "complete" street in a highly urban area, but both are designed to balance safety and convenience for everyone using the road.*

Front Street in Albert Lea, Minnesota offers a complete street example in a smaller community.

As evidenced in these two definitions context is paramount in both CSS and complete streets approaches. Understanding the community context, from the intangible like potential users for an on-street bicycle facility to the tangible such as land uses adjacent to a transit corridor, becomes an essential step in both transportation planning and project implementation.

Some authors assert complete streets and context sensitive solutions approaches illustrate a shift in transportation from an emphasis on vehicular mobility to a broader focus on accessibility (Burden & Litman 2011, LaPlante & McCann 2008). Mobility in the transportation lexicon refers to the movement of people or goods. Litman (2003) suggests that mobility has been the focus of transportation planning and engineering, but is often focused on motor vehicles and thus efficiencies in miles-driven or speed of travel are seen as beneficial to society. Accessibility, on the other hand, refers to the ability to reach desired goods, services, activities, and destinations (Litman 2003). The term "accessibility" recognizes that people chose different options such as walking, bicycling, transit, and the automobile to access goods and services. This shift in focus coincides with the complete streets movement. "When we consider accessibility we see how the modes affect one another. . . Complete streets policies are aimed at balancing access for all modes" (Burden & Litman 2011, 36). Other authors articulate that transportation planners and engineers are recognizing that demand in our transportation system is no longer solely associated with vehicles, noting that multi-modal considerations have the potential to become routine, rather than exception (LaPlante & McCann 2008, Lynott 2009, McCann & Rynne 2010).

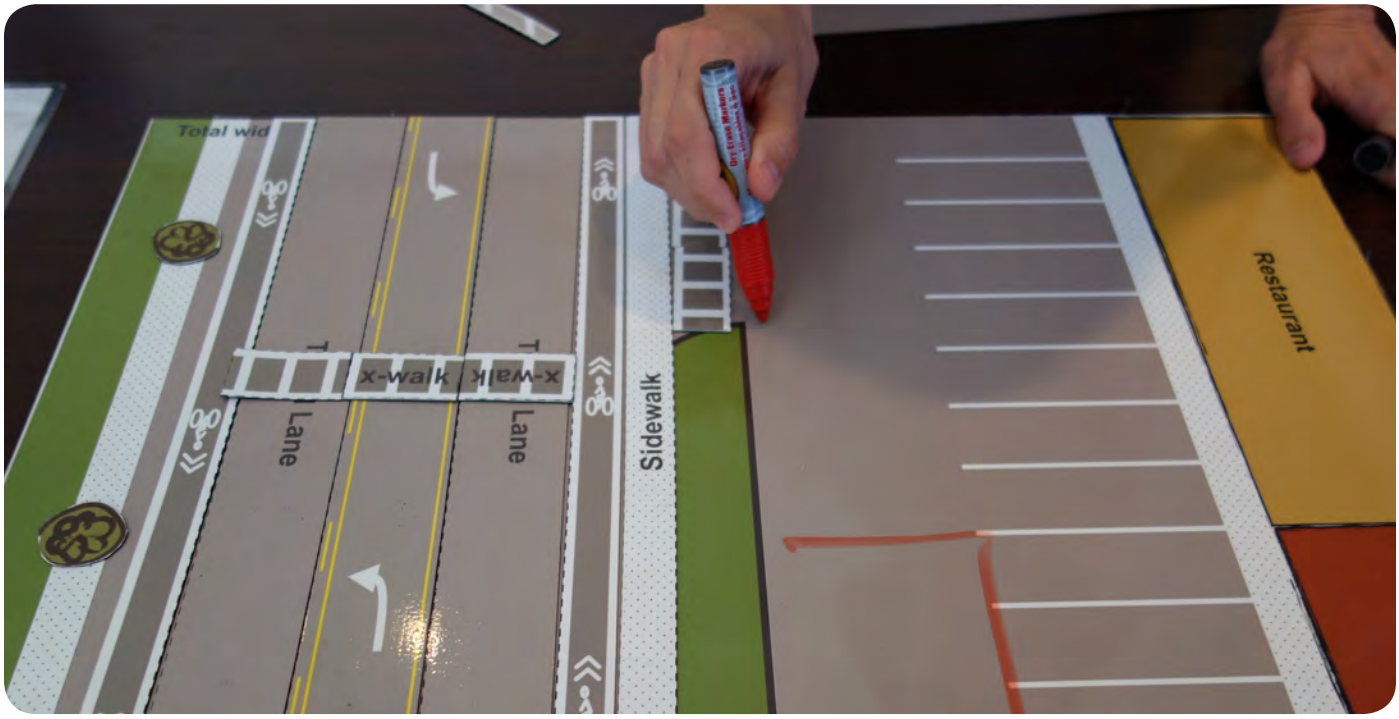
In the literature aimed at a more general audience complete streets is often linked to a variety of aspects such as livability, smart growth, safety, and health. Streets are not just corridors for movement, but often serve as public spaces (Dumbaugh 2005). With this in mind, and by definition, complete streets are intended to be more enjoyable and safe for the multiple users of these public spaces. "A basic tenet of smart growth is the creation of walkable communities that provide transportation choices, and a complete streets approach is one way to get us there" (McCann 2007, page 21). Moreover, McCann (2007) asserts that by providing for a diverse set of users, complete streets can help improve safety and health. Further, she notes that if we

COMPLETE STREETS POLICIES...
seek to change the process of transportation planning so that the needs of everyone expected to use the facility are considered from the beginning. This is critical to ensuring the consideration of the needs of older travelers. A broad approach that begins well before design standards are written is crucial to success (Lynott 2009, 29).

consider pedestrians and bicyclists in the design process, the slower modes in our transportation system, we encourage safer speeds and a safer realm for all users (McCann 2007). In effort to address health issues, public health officials are calling for complete streets as a means to provide people with a safe walking option as one way to address the obesity epidemic (McCann 2007). Lynott (2009) also calls for consideration of health and the growing aging population as important considerations in the design and development of complete streets.

Additional Resources

In addition to published articles, conference papers, and reports, additional complete streets resources are available from a variety of organizations. A key resource is the National Complete Streets Coalition website, now part of Smart Growth America. The Coalition's website provides up to date information on complete streets, including its own annual analysis of complete streets policies from across the United States. It also offers important resources such as fact sheets focused on a variety of benefits of complete streets, such as creating livable communities, advancing equity, mitigating climate change, enhancing safety, and meeting the needs of various groups such as children, persons with disabilities, and older adults. The Coalition's website also includes a series of downloadable PowerPoint presentations on complete streets topics (Smart Growth America 2013).



This engagement tool used by the Mid-Ohio Regional Planning Council in its complete streets workshop, allowed participants to explore various roadway design features.

Other complete streets resources take a particular geographic focus. For example, the Michigan Complete Streets Coalition website provides current information on complete streets efforts in the state of Michigan, and provides tailored resources such as reference policies, fact sheets, and key contacts of advocacy groups in Michigan.

In Minnesota, there is a burgeoning body of information on complete streets. The Minnesota Complete Streets Coalition, established in 2009, has developed a website that provides information such as adopted state and local policies, a summary of complete streets events, introductory presentations, and a summary of bicycle and pedestrian laws in the state. The website also features links to additional resources developed with partners such as Blue Cross and Blue Shield of Minnesota, Fresh Energy, the Bicycle Alliance of Minnesota, and Transit for Livable Communities. These groups, along with the Minnesota Complete Streets Coalition developed two complete streets policy toolkits: the *Local Advocates Complete Streets Toolkit* (Blue Cross and Blue Shield of Minnesota 2010a) and the *Local Government Complete Streets Toolkit* (Blue Cross and Blue Shield of Minnesota 2010b). The former is intended to help the public advocate for complete streets, and the latter is aimed at agency staff or government officials as they develop complete streets policies. Both toolkits provide guidance for talking about and garnering support for complete streets. They offer policy examples as well as sample letters to the editor and opinion pieces that can help in creating energy around the complete streets movement at a local or regional level.

Just prior to the publication of this guidebook, the Minnesota Department of Transportation (MnDOT) and the Local Road Research Board (LRRB) released *Complete Streets Implementation Resource Guide for Minnesota Local Agencies* (2013) in effort to "guide local agencies interested in developing their own policy" (Marti et al. 2013). This guide provides an overview of the evolution of complete streets movement at the state level in Minnesota, examples of exemplary policy language from three Minnesota communities, key terms and definitions relative to complete streets such as roadway classifications and land use typologies, and a detailed worksheet intended to help agency staff in considering multiple modes when planning and developing transportation projects.

Meeting a Need

The resources described above are valuable to governmental jurisdictions, consultants, and advocates working to advance complete streets. A look at these resources also suggests an opportunity to further contribute to advancing the practice of complete streets, by providing resources focused on implementation. With the increasing number of jurisdictions in Minnesota and in other states evolving their efforts from planning to constructing complete streets, there is an opportunity to learn from and gain insight from cities, counties, and regions as they move from complete streets concept to implementation.

Methodology

The findings presented here are based on a rigorous case-based analytical approach that draws on multiple resources to inform the case study reports and the best practices. This approach relies on the collection of primary data about the case jurisdictions, relevant policies and plans, as well as the perspectives of stakeholders in each jurisdiction. Cases selection was a critical first step in the research effort. Since the focus of the study was how jurisdictions move from complete streets concept to implementation, the top screening criterion was that the case jurisdiction, whether a city, county, or region, have a complete streets project that has been constructed. In addition, there was a priority in seeking diversity in geographic location and size of the jurisdiction.

Feedback on the case selection and overall methodology was provided by a Technical Advisory Panel (TAP), consisting of transportation planning and engineering professionals from the public and non-profit sectors in Minnesota. The TAP was assembled by the Minnesota Department of Transportation and the Local Road Research Board. Key priorities TAP members included prioritizing cases located in a northern climate to allow for consideration of snow removal and winter maintenance. The TAP also called for including at least a small number of cases from Minnesota to ensure representation of the institutional and statutory context represented by the TAP members.

The study ultimately focused on eleven cases. The population, geographic size, annual snowfall, and percentage of residents who commute by bicycling, walking, or transit are presented in Figure 1. The cases vary in terms of population and geographic size, with a few cases being quite large, focusing on entire counties or metropolitan areas. All but two cases receive over two feet of snow each year. There is quite a lot of variation in commute mode, with older and more urban communities generally seeing higher rates of commuting by mode other than the automobile.

Case Studies Community Stats

location	population	total area (sq. mi)	avg. snowfall (inches)	commute by bike, walk, transit
1. Albert Lea, MN	18,016	13	49.9	12.4
2. Arlington County, VA	207,627	26	22	33.9
3. Boulder, CO	97,385	27	60	28.0
4. Charlotte, NC	731,424	298	5.8	6.1
5. Columbus, OH Metropolitan Area	1,901,974	1,132*	27.7	4.3
6. Dubuque, IA	57,637	30	42.7	7.3
7. Fargo-Moorhead, ND/ MN Metropolitan Area	208,777	573	40.8	5.9
8. Hennepin County, MN	1,152,425	554	49.9	12.4
9. Madison, WI	233,209	77	44.1	23.1
10. New Haven, CT	129,585	19	26.2	28.5
11. Rochester, MN	106,769	55	48.9	8.9

Figure 1. Case study locations with basic community statistics.

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration
* Metropolitan Planning Organization (MPO) area (source: U.S. Department of Transportation MPO Database)

To examine the cases described above, the study utilized a consistent methodology for collecting data across each of the eleven locations. A qualitative approach was used, featuring both document review and interview techniques. Site visits were conducted for each case. Key techniques are described below.

Step 1. Document Review

The initial research task was to gain familiarity with the planning and policy frameworks surrounding complete streets in each of the case jurisdictions. We reviewed over 60 documents across the 11 cases, including but not limited to resolutions, policies, guidelines, plans, toolkits, checklists, and project reports. A structured review worksheet was used to characterize the content of each document. In addition to reviewing documents, relevant websites were reviewed to gather additional information about the complete streets approach and the institutional structure in the case jurisdiction.

Step 2. Site Visits

For each of the eleven cases, we conducted a site visit, traveling to one or more complete streets project locations in each jurisdiction, depending on the number of constructed projects available. The site visits allowed us to gain a sense of the transportation network, as well as the land use and design character of the jurisdiction, neighborhood, and/or corridor in which the project(s) was located. The researchers conducted a photo documentation of completed projects in each jurisdiction, gathering well over 1,000 original photos.

Step 3. Interviews

In association with the site visits, we conducted 103 interviews with key informants from each of the case jurisdictions. Following on preliminary contact with the complete streets staff lead for each case, we used a "snowball" sampling technique that allowed interviewees to identify others who might be able to offer insight relative to the study. Using the document and website review outcomes, we were also able to identify additional interviewees who played a variety of roles in advancing complete streets in each jurisdiction. We intentionally sought interviewees representing a diverse range of perspectives, including engineers, designers, planners, maintenance staff, public safety staff, advocates, agency staff (e.g. state department of transportation staff), and elected officials. Interviews were conducted using a consistent interview protocol that gathered information related the community/institutional context, complete streets guidance documents, process and decision making, complete streets projects, funding, and evaluation and outcomes. A key focus in the interview questions was on understanding the local context and ways in which local resources, characteristics, constraints, processes, and people facilitated the implementation of complete streets within the jurisdiction. The TAP was engaged in reviewing the interview questions. In addition to completing interviews in person during site visits, the researchers conducted additional interviews by phone to gather further insight.

Best Practices

This section offers valuable insights on complete streets practice from the eleven case jurisdictions. It draws from across a variety of geographic, institutional, land use, and transportation contexts to reveal key areas of best practice, including:

- BP 1 **Framing and Positioning**
- BP 2 **Institutionalizing**
- BP 3 **Analysis and Evaluation**
- BP 4 **Project Delivery and Construction**
- BP 5 **Promotion and Education**
- BP 6 **Funding**

In addition to describing the content of each best practice example, details about context are also provided. The descriptions provide details that go beyond simply what worked well in that particular jurisdiction by highlighting critical contextual characteristics that facilitated implementation. This approach is intended to help readers reflect on their own context and be strategic in identifying which practices might be most relevant to their situation.

A bike boulevard in Madison, Wisconsin offers an example of one of the many facilities in the multi-modal network the City is creating.

BP 1

Framing and Positioning

The first best practice area is focused on how complete streets is framed and positioned relative to other previous and ongoing transportation and community planning and policy efforts. Formal definitions of complete streets play a role in some jurisdictions, though broader efforts to characterize a complete streets practice relative to other planning and policy efforts. In some cases, the complete streets term is underlying or simply an evolution of an existing and well-established focus on multi-modal transportation.

Advancing Lifelong Communities through Complete Streets in the Columbus Metropolitan Area

The Mid-Ohio Regional Planning Commission (MORPC) serves as the Metropolitan Planning Organization (MPO) and regional planning body for the Columbus, Ohio, region. It has played a central role in advancing complete streets in the region via a number of means, including policy, planning, and funding. One of its key efforts has been to build knowledge of complete streets practices. MORPC initially framed complete streets largely as a transportation issue, but that framing evolved based on feedback from local government officials. Over the past two to three years, MORPC has worked to characterize complete streets more broadly, focusing on how complete streets contributes to "successful" and "lifelong" communities that are responsive to changing demographics and associated changes in preferences. Community competitiveness is also part of the framing, as Columbus and surrounding suburban communities compete for new residents and economic growth. MORPC's *Metropolitan Transportation Plan* (2012a) offers valuable data and analysis of demographic and development trends that the region needs to address as it plans for transportation in the future. The plan also connects complete streets with broader transportation planning efforts, linking it to safety, accessibility, and various transportation modes.

"MORPC...

is working to create "lifelong communities." The goal is to ensure central Ohio's cities, villages, townships and counties continue to prosper, attract and retain businesses and residents, and in return have a richer tax base to support important programs, such as infrastructure, education and social services. An important facet of Lifelong Communities is Complete Streets."

source: MORPC 2012-2035 Metropolitan Transportation Plan

To build knowledge of both complete streets and the broader concept of successful and lifelong communities, MORPC conducted two large regional workshops. The first was a complete streets workshop for regional policy makers intended to build understanding of complete streets approaches. The workshop featured hands-on interactive exercises that engaged participants in redesigning streets and adjacent land uses. The second workshop focused on market and demographic trends that integrating developers, real estate professionals, designers, and local government officials. In addition to the workshops, MORPC also produced a ten-minute video

called "Rethinking Streets for Successful Communities" (MORPC 2011). The video features background information on complete streets, but also draws on local elected officials, developers, and experts perspectives about characteristics of successful communities. The video places a strong emphasis on streets as a critical part of the public realm that can create significant community value. It also makes a strong connection between transportation and land use planning and policy.

A double roundabout in Hilliard, Ohio, addresses the needs of vehicles, as well as school buses and children from an adjacent school.

Connecting Livability and Sustainability in Dubuque

For the City of Dubuque, Iowa, framing and positioning around complete streets was informed by broader efforts to advance community sustainability and livability. Six years before the adoption of a complete streets policy in 2011, the City of Dubuque initiated ENVIS1ON, a "grass-roots effort for all citizens of the Tri-states…to make greater Dubuque a better place to live, work and play" (Envision 2005). The goal of this project was to develop a list of ten priority community projects by 2010, and it engaged community members in a variety of ways from free community breakfasts to coffee clubs and neighborhood association meetings. The process generated over 3,000 ideas submitted by over 10,000 people (City of Dubuque, n.d. (a)). The list was winnowed to ten projects, two of which have had a direct connection to complete streets practices in Dubuque. Project Six – "integrated walking, biking, hiking trail system" – led to the development of a plan for a non-motorized trail system, the *Tri-State Area Integrated Walking, Bicycling, Hiking Network Plan* (East Central Intergovernmental Alliance, n.d.). This document has been influential in how the City prioritizes complete streets project implementation. Project Ten – "Warehouse

District Revitalization" – led the City of Dubuque to initiate the Historic Millwork District Master Planning Project, a 12-block district with complete streets features such as bike facilities, wide sidewalks, enhanced crossings, public art, and period lighting.

Around the same time as ENVIS1ON, another initiative known as Sustainable Dubuque, identified eleven guiding principles to encourage sustainable practices throughout the community. In the *Sustainable Dubuque* document, complete streets is mentioned as one way to align City efforts with the Environmental Integrity principles of sustainability (Figure 2) (City of Dubuque 2013). Both ENVIS1ON and Sustainable Dubuque engaged community members early in the process in identifying of key goals and initiatives for the City. The visibility of ENVIS1ON and Sustainable Dubuque, and the associated community engagement has garnered broad support for initiatives tied to these efforts, including complete streets.

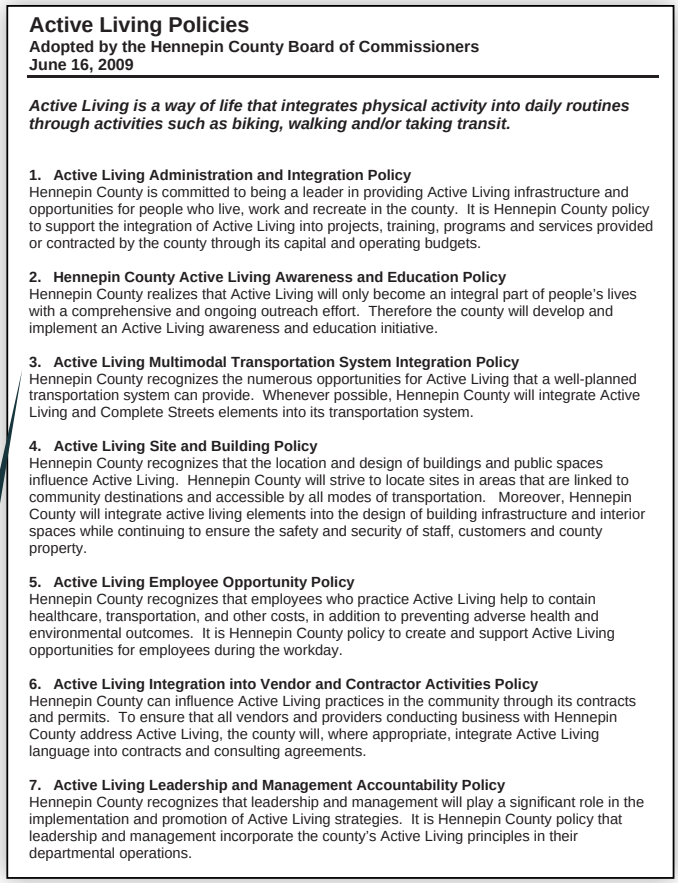
Figure 2. Pages 8-9 of Sustainable Dubuque provide detail on the eleven guiding principles: Regional Economy, Smart Energy Use, Smart Resource Use, Community Design, Green Buildings, Healthy Local Food, Community Knowledge, Reasonable Mobility, Healthy Air, Clean Water, Native Plants & Animals (City of Dubuque 2013).

Framing complete streets as one way to move the City of Dubuque toward its livability and sustainability goals has helped create broad acceptance of complete streets implementation by business leaders, agency staff, and residents.

In some areas of the District, historical brick was used as sidewalk treatments, and new pavers that can accommodate freight vehicles were used in some docking areas.

The Active Living Connection in Hennepin County

Hennepin County, Minnesota's complete streets efforts are also informed by a broader framing. For this large, mostly urban county, complete streets is an outgrowth of its previously established active living program. In 2006 Hennepin County launched Active Living Hennepin County (ALHC) with grant funding from Blue Cross and Blue Shield of Minnesota and Hennepin County. ALHC is "supported by a partnership of cities, business and non-profits working together to increase opportunities for physical activity" (Hennepin County 2013). As the County's website notes, active living is a way of life that integrates physical activity into daily routines and destinations through activities such as biking, walking and/or taking transit (Hennepin County 2013). The first Active Living Hennepin County resolution was passed in 2007 and "laid the foundation for the development and implementation" of active living and complete streets policies and practices in Hennepin County (Hennepin County 2013). The intersection between active living and complete streets is apparent as some interviews with staff and advocates noted that the complete streets program has garnered wide support, in part, because of its connection to the well-established and ongoing active living initiatives.



Active Living Policies
Adopted by the Hennepin County Board of Commissioners
June 16, 2009

Active Living is a way of life that integrates physical activity into daily routines through activities such as biking, walking and/or taking transit.

1. Active Living Administration and Integration Policy
Hennepin County is committed to being a leader in providing Active Living infrastructure and opportunities for people who live, work and recreate in the county. It is Hennepin County policy to support the integration of Active Living into projects, training, programs and services provided or contracted by the county through its capital and operating budgets.

2. Hennepin County Active Living Awareness and Education Policy
Hennepin County realizes that Active Living will only become an integral part of people's lives with a comprehensive and ongoing outreach effort. Therefore the county will develop and implement an Active Living awareness and education initiative.

3. Active Living Multimodal Transportation System Integration Policy
Hennepin County recognizes the numerous opportunities for Active Living that a well-planned transportation system can provide. Whenever possible, Hennepin County will integrate Active Living and Complete Streets elements into its transportation system.

4. Active Living Site and Building Policy
Hennepin County recognizes that the location and design of buildings and public spaces influence Active Living. Hennepin County will strive to locate sites in areas that are linked to community destinations and accessible by all modes of transportation. Moreover, Hennepin County will integrate active living elements into the design of building infrastructure and interior spaces while continuing to ensure the safety and security of staff, customers and county property.

5. Active Living Employee Opportunity Policy
Hennepin County recognizes that employees who practice Active Living help to contain healthcare, transportation, and other costs, in addition to preventing adverse health and environmental outcomes. It is Hennepin County policy to create and support Active Living opportunities for employees during the workday.

6. Active Living Integration into Vendor and Contractor Activities Policy
Hennepin County can influence Active Living practices in the community through its contracts and permits. To ensure that all vendors and providers conducting business with Hennepin County address Active Living, the county will, where appropriate, integrate Active Living language into contracts and consulting agreements.

7. Active Living Leadership and Management Accountability Policy
Hennepin County recognizes that leadership and management will play a significant role in the implementation and promotion of Active Living strategies. It is Hennepin County policy that leadership and management incorporate the county's Active Living principles in their departmental operations.

Figure 3. The Active Living Policies adopted by Hennepin County Board of Commissioners include complete streets language. (Hennepin County 2009)

3. Active Living Multimodal Transportation System Integration Policy

Hennepin County recognizes the numerous opportunities for Active Living that a well-planned transportation system can provide. Whenever possible, Hennepin County will integrate Active Living and Complete Streets elements into its transportation system.

Advancing a Modal Shift in Boulder

For over two decades, Boulder, Colorado, has been working on a transportation planning and implementation approach that is consistent with complete streets. While only recently called complete streets, Boulder has made an explicit decision to frame and position its transportation strategy to one focused on multi-modal corridors and networks. Calling initially for a modal shift away from automobiles in its 1989 *Transportation Master Plan*, a modal shift priority was established in 1994 when the City decided to limit vehicle miles traveled (VMT) growth to that year's levels. The current 2008 *Transportation Master Plan* notes its intent as reconciling "two seemingly conflicting goals: first to provide mobility and access in the Boulder Valley in a way that is safe and convenient; and second, to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise." The 1989 Plan, more recent plan updates, the policy decision to limit VMT, and significant investments in new facilities and services, have produced a multi-modal system that includes on- and off-street bicycle and pedestrian facilities, and an extensive transit system with strong connections to other modes. The network approach has driven Boulder to act comprehensively and strategically to build networks for each mode, and at the same time provide critical interconnections among modes. Also, as noted by interviewees in the study, there has been an effort to institutionalize a multi-modal approach, but also to advance a culture change. As one interviewee noted, "you can't write a memo and say this is what we are going to do." The strong focus on multi-modalism has been critical to helping Boulder maintain relatively flat VMT as illustrated in Figure 4. Further, the City's well-developed set of plans and policies has positioned Boulder as highly competitive for regional, state, and federal funds for all transportation modes.

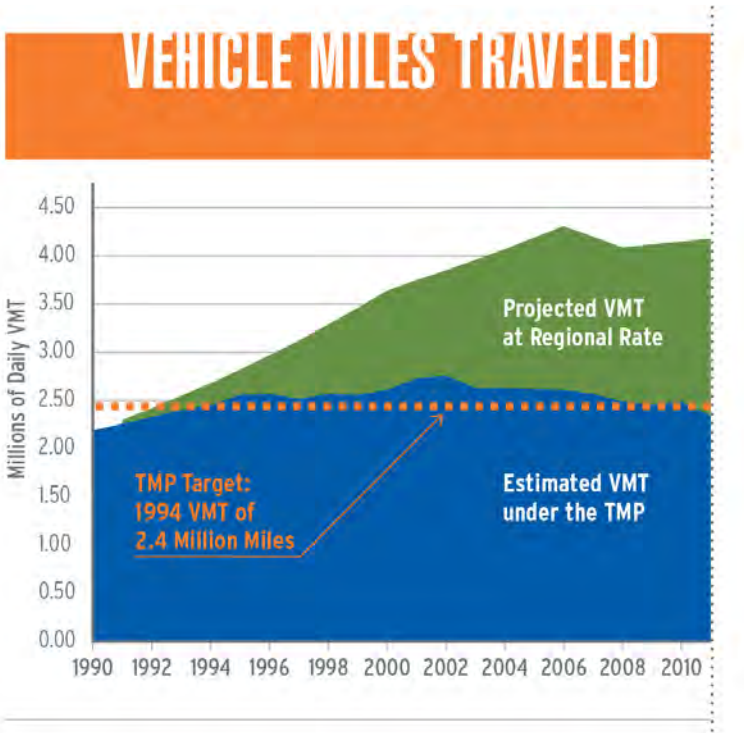


Figure 4. Vehicle Miles Traveled for the City of Boulder from 1990 to 2010, as reported in *Transportation to Sustain a Community: A Report on Progress* (City of Boulder 2012).

The City of Boulder has implemented transit promotion programs and infrastructure as one way to maintain its target VMT.

BP 2

Institutionalizing

The second best practice area draws on approaches that jurisdictions have used to institutionalize complete streets through plans, policies, and other guidance documents, building a statutory and legal framework for complete streets implementation. In addition, this best practice area focuses on approaches to advancing decision-making processes that facilitate consideration of complete streets as jurisdictions move from planning to projects. The case examples highlighted in this section clearly illustrate the significance of building complete streets into decision making processes, making complete streets the standard and typical approach, rather than the exception. In addition, the cases express the importance of bringing together a range of expertise and interests to facilitate a broad-based buy in for complete streets implementation. This section first highlights approaches to institutionalizing complete streets through relevant planning and policy documents, and then examines ways to integrate complete streets into decision-making processes.

Charlotte's Urban Street Typology and Guidelines

Following on its burgeoning focus on a multi-modal transportation planning approach, the City of Charlotte Department of Transportation formalized its complete streets approach in 2007 through the *Urban Street Design Guidelines (USDG)* document (City of Charlotte 2007). The intent of this document is to provide "more streets for more people" (City of Charlotte 2007, 51). To accomplish this goal, the *USDG* notes that a number of changes are needed in how the City plans and designs streets (see box below).

Applying Charlotte's Urban Street Design Guidelines requires the following

1. Ensuring that the perspectives of all stakeholders interested or affected by streets are seriously considered during the planning and design process for existing or future streets;
2. Defining a clear sequence of activities to be undertaken by staff, consultants and stakeholders;
3. Remembering that this will be a process that is much more geared toward what we want to happen in the future than just accepting what happened in the past or exists now;
4. Verifying that the inevitable tradeoffs affecting objectives, benefits, costs, and impacts are well documented so that the recommendations made by staff, consultants or stakeholders are based on understanding the direct effects on specific modes of travel and/or land use intentions; and
5. Always striving to create not only more streets, but also more complete streets that are good for all modes of travel, and even some great streets that are remarkable because of the very effective and favorable ways that the adjacent land uses and transportation functions of those streets support each other.

source: Urban Street Design Guidelines (City of Charlotte 2007)

Further illustrating the application of the *USDG*, the six-step process for applying Charlotte's Urban Street Design Guidelines (Figure 5) specifically calls for examination of both the land use and transportation contexts when identifying deficiencies and objectives for the transportation project. As an alternative to the standard approach of designating streets based on functional classification, the *USDG* identifies five street types (Main Streets, Local Streets, Avenues, Boulevards, and Parkways) in the community and explicitly characterizes them in terms of their land use and transportation contexts, on a continuum from pedestrian- to auto-oriented (Figure 6). The *USDG* offers design guidelines and street sections for each of the five street types, explicitly identifying zones of activities including development, pedestrians, green (landscaping), bicycles, parking, and motor vehicles. Figure 7 offers an illustration of a typical Avenue street section and definitions of the various zones of activity. The *USDG* serves as a comprehensive framing and guidance document for the City in terms of complete streets. Critical to further institutionalizing complete streets have been efforts to integrate the *USDG* into City policy including the subdivision ordinance, tree ordinance, and land development standards, ensuring that complete streets is considered as development and redevelopment projects are reviewed. The *USDG* and policy changes have led the City to a point where, as one interviewee noted, "we don't look at them as complete streets projects, just as projects" and now "the burden falls on the omission [of complete streets] rather than the addition."

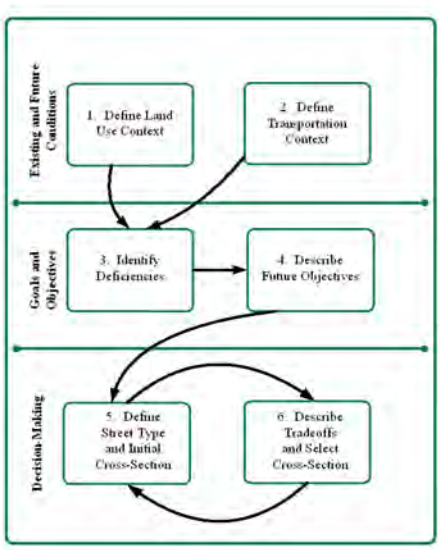


Figure 5. Six-Step process for Applying Charlotte's Urban Street Design Guidelines

Figure 6. This graphic in the USDG illustrates a continuum of new street types from pedestrian- to auto-oriented

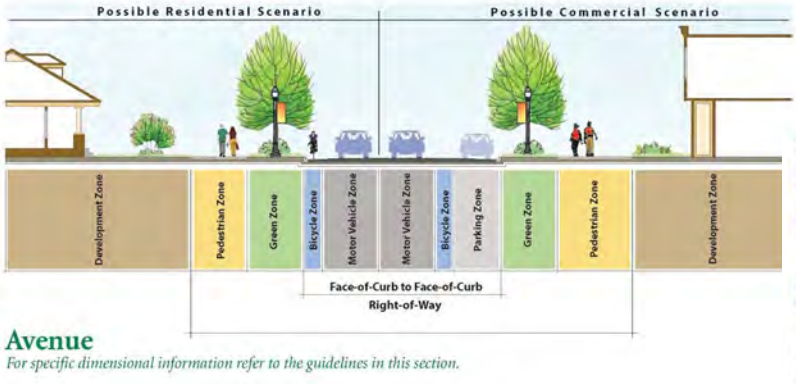


Figure 7. An illustration of a typical Avenue street section and definitions of the various zones of activity.

Source of all imagery on this page: City of Charlotte Urban Street Design Guidelines (2007)

Advancing Consistent Complete Streets Decision Making in Hennepin County

Since the adoption of a complete streets policy in 2009, Hennepin County has incorporated complete streets into many of its Public Works Department's documents and processes. Two notable process tools that help institutionalize complete streets in this jurisdiction include the Complete Streets Task Force and a project-specific *Complete Streets Checklist*.

First, a year after passage of its complete streets policy, the County established a Complete Streets Task Force. The Task Force is comprised of a variety of stakeholders to bring multiple perspectives to the table in reviewing the County's complete streets practices, as evident in the charge noted below:

> *Complete Streets Task Force is being established to review and recommend the most effective use of funding streams available for complete streets, develop consistent implementation principles, practices and guidelines, and identify demonstration projects for Hennepin County's Complete Streets policy, as adopted in Board Resolution 09-0317 (Hennepin County 2011).*

The Task Force has been an influential and important body for Hennepin County relative to complete streets implementation. Staff and task force members report that having a task force helps maintain momentum around complete streets and that the composition of the task force helps to reinforce that complete streets is not just about providing for multiple modes, but doing so in a way that accommodates all users of all abilities.

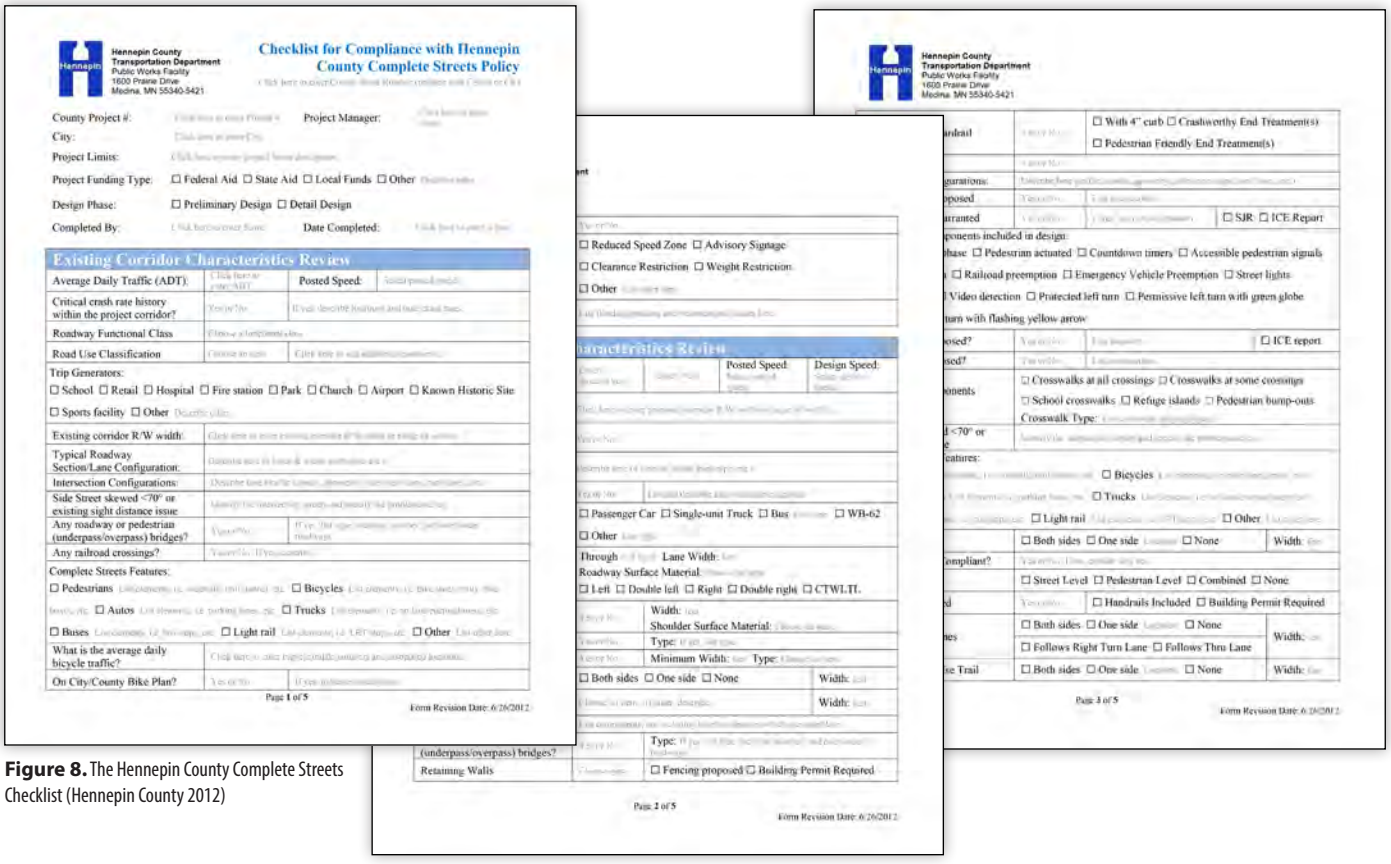
Anticipated Outcomes of the Complete Streets Task Force

1. Recommendations of the most effective use of funding streams available for Complete Streets
2. Development of consistent implementation principles, practices and guidelines for consideration on every county transportation and development project, including corridors that provide connections to county libraries and other facilities, between activity centers and major transit connections, and in areas used frequently by pedestrians today or with the potential for frequent use in the future.
3. Recommendations on the most effective connections between Complete Streets and related county programs including Active Living, Transit Oriented Development, Transit Planning, Community Works, and economic development.
4. Identification of potential Complete Streets demonstration projects from the county's current inventory and assessment of complete streets, its Capital Improvement Program (CIP), and long range planning, that demonstrate different elements of Complete Streets.
5. Common understanding of the relationship between the State Aid Standards process, the planning and design of local roadways, and opportunities for Complete Streets implementation.
6. Development of consistent strategies for working with other transportation agencies, whose corridors are located within the county to incorporate Complete Streets on future projects.

source: Hennepin County Complete Streets Task Force (2011)

Second, in 2010, also just after the County's complete streets policy was adopted, County staff developed a *Checklist for Compliance with Hennepin County Complete Streets Policy* to be used for County State Aid Highway (CSAH) and County Road (CR) construction projects. The checklist was revised in 2012, is five pages in length, and requires thorough consideration of the corridor's context and opportunities to incorporate complete streets elements in project implementation. To complete the Checklist, project staff consider key planning documents, existing and proposed roadway characteristics, bike and pedestrian amenities, intersection issues, Americans with Disabilities Act (ADA) accessibility, and many additional aspects of the corridor.

The *Checklist* (Figure 8) is a requirement for both redesign or reconstruction projects and its intent is to "ensure that project stakeholders understand a project's context and types of improvements that are being proposed" (Hennepin County 2012). Both the Task Force and *Checklist* illustrate the County's commitment to complete streets, ensuring that both project and policy-level decision making are informed by a broad base of information and stakeholder perspectives.


Hennepin County Transportation Department
Public Works Facility
1600 Prairie Drive
Medina, MN 55340-5421

Checklist for Compliance with Hennepin County Complete Streets Policy

County Project #: Project Manager:
City:
Project Limits:
Project Funding Type: ☐ Federal Aid ☐ State Aid ☐ Local Funds ☐ Other
Design Phase: ☐ Preliminary Design ☐ Detail Design
Completed By: Date Completed:

Existing Corridor Characteristics Review

Average Daily Traffic (ADT):		Posted Speed:	
Critical crash rate history within the project corridor?			
Roadway Functional Class			
Road Use Classification			
Trip Generators: ☐ School ☐ Retail ☐ Hospital ☐ Fire station ☐ Park ☐ Church ☐ Airport ☐ Known Historic Site ☐ Sports facility ☐ Other			
Existing corridor R/W width:			
Typical Roadway Section/Lane Configuration:			
Intersection Configurations:			
Side Street skewed <70° or existing sight distance issue			
Any roadway or pedestrian (underpass/overpass) bridges?			
Any railroad crossings?			
Complete Streets Features: ☐ Pedestrians ☐ Bicycles ☐ Autos ☐ Trucks ☐ Buses ☐ Light rail ☐ Other			
What is the average daily bicycle traffic?			
On City/County Bike Plan?			

Page 1 of 5
Form Revision Date: 6/26/2012

☐ Reduced Speed Zone ☐ Advisory Signage
☐ Clearance Restriction ☐ Weight Restriction
☐ Other

Posted Speed: Design Speed:

☐ Passenger Car ☐ Single-unit Truck ☐ Bus ☐ WB-62
☐ Other
Through Lane Width:
Roadway Surface Material:
☐ Left ☐ Double left ☐ Right ☐ Double right ☐ CTWLTL

Width:
Shoulder Surface Material:
Type:
Minimum Width: Type:
☐ Both sides ☐ One side ☐ None Width:
Width:

Type:
(underpass/overpass) bridges?
Retaining Walls ☐ Fencing proposed ☐ Building Permit Required

Page 2 of 5
Form Revision Date: 6/26/2012

Hennepin County Transportation Department
Public Works Facility
1600 Prairie Drive
Medina, MN 55340-5421

☐ With 4" curb ☐ Crashworthy End Treatment(s)
☐ Pedestrian Friendly End Treatment(s)
☐ SJR ☐ ICE Report
☐ Pedestrian actuated ☐ Countdown timers ☐ Accessible pedestrian signals
☐ Railroad preemption ☐ Emergency Vehicle Preemption ☐ Street lights
☐ Video detection ☐ Protected left turn ☐ Permissive left turn with green globe
turn with flashing yellow arrow
☐ ICE report
☐ Crosswalks at all crossings ☐ Crosswalks at some crossings
☐ School crosswalks ☐ Refuge islands ☐ Pedestrian bump-outs
Crosswalk Type:
☐ Bicycles
☐ Trucks
☐ Light rail ☐ Other
☐ Both sides ☐ One side ☐ None Width:
☐ Street Level ☐ Pedestrian Level ☐ Combined ☐ None
☐ Handrails Included ☐ Building Permit Required
☐ Both sides ☐ One side ☐ None Width:
☐ Follows Right Turn Lane ☐ Follows Thru Lane
☐ Both sides ☐ One side ☐ None Width:

Page 3 of 5
Form Revision Date: 6/26/2012

Figure 8. The Hennepin County Complete Streets Checklist (Hennepin County 2012)

Fargo-Moorhead's Regional Complete Streets Policy Provides Support to Local Communities

An additional regional-scale approach to institutionalizing complete streets comes from the Fargo-Moorhead Metropolitan Council of Governments, or Metro COG, which spans an expansive 573 square mile area and is situated at the border of Minnesota and North Dakota. In 2010, Metro COG adopted its *Complete Streets Policy Statement* (Fargo-Moorhead Metropolitan Council of Governments 2010). The policy is recognized as one of the top metropolitan planning organization (MPO) policies in the nation by the National Complete Streets Coalition (National Complete Streets Coalition, 2011). The Metro COG policy is notable for its thoroughness and depth of detail on various issues relevant to complete streets. Eleven pages in length, it offers important information on the benefits of complete streets, a clear definition of complete streets for the Metro COG area, and describes how Metro COG can support local efforts in design and implementation of complete streets.

THIS POLICY STATEMENT...

is meant to act as a guidance document. The guidance within this document is not a requirement set upon any of Metro COG's member local units of government or other federal aid recipients in the FM Metropolitan Area. The hope is that member local units of government will consider all modes of transportation during the planning, design, construction, and operation phases as provided in this Complete Streets Policy Statement.

...

[Local] implementation strategies are meant to be contextual in nature yet are standardized enough that it is likely most jurisdictions will implement these strategies in very similar ways. Thus, aesthetics will likely be unique to each jurisdiction but the methods of design will likely be similar.

source: Metropolitan Council of Governments Complete Streets Policy Statement (2010)

The policy is praised by local communities within the MPO because it provides important guidance but refrains from being too prescriptive in design, process, or implementation. The policy is clear in communicating that Metro COG plays a supportive role in local complete streets efforts, and it offers examples and ways in which local communities can encourage multi-modal transportation that considers users of all abilities. As a means of institutionalizing complete streets, the regional policy has helped achieve a level of consistency in advancing complete streets across local governments. A number of local units of government (e.g. City of Fargo, City of Dilworth, Cass County) reported that they were in the process of considering how to move forward with complete streets policies of their own but ultimately opted not to create their own policies. Instead, at least two jurisdictions have formally passed resolutions supporting the Metro COG policy. As some interviewees noted, formally supporting the Metro COG policy has illustrated a local commitment to integrating complete streets into local efforts without "recreating the wheel."

Broadway Drive serves as the City of Fargo's 'main street." It accommodates automobiles, freight, bicyclists, and pedestrians in a safe manner through slow speeds, visible signage, and clearly delineated pedestrian space.

Complete street applications look different depending on the local land uses and right of way. These photos illustrate different ways that the City of Fargo accommodates pedestrians and bicyclists in urban to more suburban conditions.

BP 3

Analysis and Evaluation

The third best practice area addresses approaches to conducting analysis and evaluation to inform complete streets planning and projects. Analysis can be conducted prior to or during a project and evaluation is conducted after a project is complete. Analysis and evaluation can also be conducted at the neighborhood, corridor, and even community scale, tracking progress toward complete streets implementation and assessing performance of the complete streets system. Across the case jurisdictions included in the study, only a few systematically collect performance data to assess long-term implementation. Among the other jurisdictions in the study, there are additional examples of approaches to collecting data or conducting evaluation at the project scale on a more ad hoc basis. Where analysis and evaluation are being conducted, there is the potential for these data to inform project design, respond to concerns from residents and elected officials, and offer insights into the long-term performance and impacts of the complete streets interventions.

Test Striping to Assess Project Impacts in Fargo

One example of project-scale analysis and evaluation comes from the City of Fargo, North Dakota, located within the Fargo Moorhead Metro COG jurisdiction. In the spring of 2012, the City of Fargo was in the process of developing a design solution to better accommodate bicyclists on two major north-south thoroughfares, University Drive and 10th Street. These roadways connect the North Dakota State University (NDSU) campus to the downtown area of Fargo and have high pedestrian, bike, and auto traffic volumes. Both streets were identified in the City's Comprehensive Plan as the appropriate locations to connect the downtown with the NDSU main campus via bike (City of Fargo 2012a). With the charge to provide better bicycling connection between the campus and downtown, the City anticipated some opposition to on-street bicycle facilities from residents. Predicting that public acceptance may be a challenge, the City Engineering Department drafted a detailed memorandum that articulated the need for on-street facilities (see box at left), and put temporary markings on the street so local staff, elected officials, and community members could visualize how the street

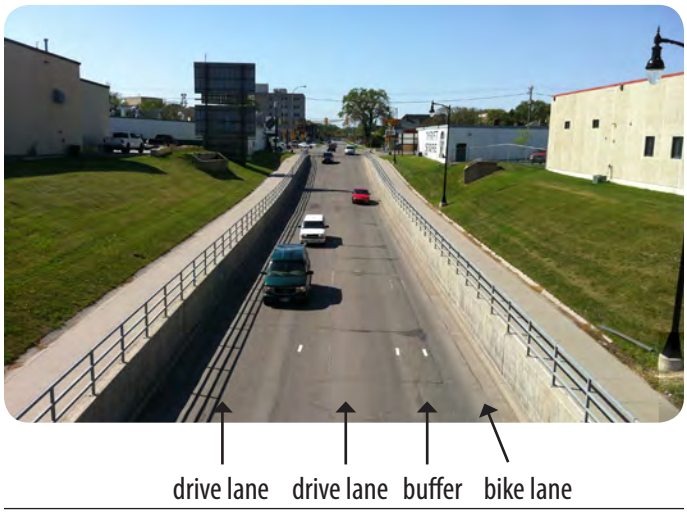
On-Street Bike Facility Plan Memorandum to City Commissioners

Need for On-Street Facilities

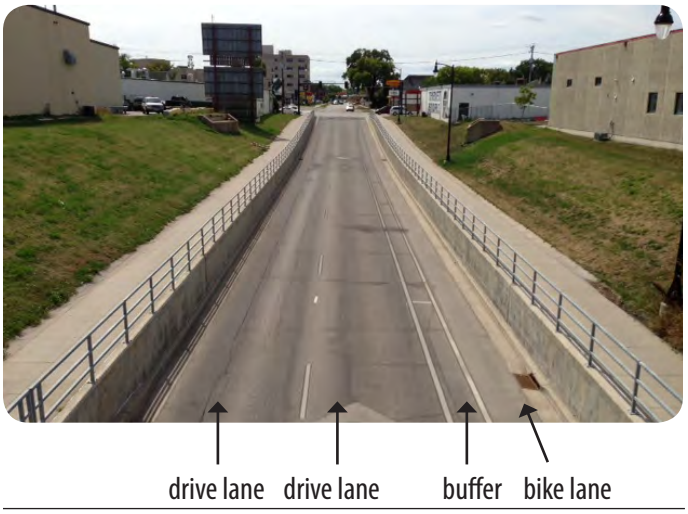
1. Part of comprehensive plan to connect downtown and NDSU main campus via bike.
2. Increases safety and awareness of bicyclists.
    a. Enables bicyclists to ride at a constant speed,
    b. Enables bicyclists to position themselves where they will be visible to motorists,
    c. Encourages bicyclists to ride in the street instead of riding on the sidewalks
    d. Creates a visual separation between bicyclists and automobiles, and
    e. Increases predictability of bicyclist and motorist positioning and interaction
3. Increases bicyclists comfort and confidence.
4. Visually reminds motorists of bicyclists right to the street.

source: City of Fargo (2012b)

would change with the new striping. This "test" striping not only allowed the engineering staff to find the best design solution along the length of the corridor, but it also helped educate the public about changes to the roadway. With this practice, community members could see how it would change vehicle movements on the street and it helped the City in gaining public acceptance for the new bike lanes. The bike lanes were striped in spring of 2013 and have been well received by the community.



10th Street with test striping, spring 2012.



10th Street striping implementation, fall 2012.

Arlington County Transportation Research Program

As a complement to project-specific analyses such as speed studies or traffic counts, Arlington County is unique in its emphasis on a data collection and evaluation. Of the cases in the study, Arlington County maintains the most comprehensive transportation research program. Data collection at multiple scales and across all modes informs updates of the County's *Master Transportation Plan*, as well as decision making about specific projects. Specific to the implementation of complete streets, corridor and project studies, such as the *Rosslyn Multi-Modal Transportation Study*, highlight relevant data (e.g. traffic counts for various modes, crashes for various modes, commute mode share, curb space, levels of service, land use) (Arlington County 2012). In addition, *Master Transportation Plan* elements typically include similar relevant data. For example, the Pedestrian Element of the *Master Transportation Plan* presents data on pedestrian fatalities and injuries and notes that these data are "helpful in crafting accident countermeasures and identifying needed facility improvements" (Arlington County 2008, 26). A second example illustrates Arlington County's focus on the connection between land use and transportation, specifically the implications that changes in land use type and density have on transportation facilities and demand. This excerpt from the Transit Element of the *Master Transportation Plan* illustrates the kinds of analysis and decision making that can be undertaken with access to relevant data:

"The growth of office and retail employment around Orange Line stations from Ballston to Rosslyn may free up boarding capacity for inbound Orange Line riders in the morning as some eastbound commuting passengers exit the trains at the preceding stops. The development of employment sites at these Metrorail stations also has contributed to a more-balanced demand on the system as growth in the numbers of passengers traveling counter to the traditional flow can be accommodated relatively easily with the current system capacity" (Arlington County 2009, 26).

Additional data is collected and analyzed by Arlington County's Commuter Services agency. Commuter Services works on transportation demand management (TDM) for the county, conducting significant outreach and engagement with residents, commuters, and employers. Commuter Services' Mobility Lab reports not only on direct transportation impacts (e.g. eliminating 44,361 vehicle trips on the average workday in 2012), but also translates these impacts into fuel savings and reductions in key pollutants (Arlington County Commuter Services 2012). The Mobility Lab serves as a high capacity and comprehensive "research-and-development initiative" and "think tank" for Arlington County Commuter Services (Mobility Lab 2013a).

Mobility Lab Mission

Mobility Lab nurtures innovations to a fundamental requirement of human life: transportation. It is a place of collaboration, education, and continuous improvement for moving people in more healthy, efficient, and sustainable ways.

Mobility Lab Vision

Our vision is a human population that efficiently navigates individual movements between home, work, and all of life's destinations. Planning for easy and enjoyable transportation should be no different than researching your choice of a cell phone, physician, or any other product or service. To make this more possible in more places, we envision Mobility lab as:

- The home of cutting-edge original transportation research
- A convener and engager of top minds on the topic locally in the DC region, nationally, and worldwide, and
- The leading online source for how we can improve society by offering a better and healthier array of transportation options.

source: Mobility Lab (2013a)

Extensive performance data are collected and relate to items such as engagement of employers, distribution of brochures, participation in events, social media followers, transit information inquiries, bus stop sign repairs, and new outreach materials produced (Arlington County Commuter Services 2012). Beyond these data, the Mobility Lab also draws on multiple data sets that connect transportation to issues such as land use, health, and housing impacts (Mobility Lab 2013b). Overall, the transportation and commuter services data offers a critical means of tracking the long-term impacts of the County's transportation investments, plans, and policies. Data are also helpful in responding to public and elected official concerns, as well as in making the case for key investments and actions. The Mobility Lab website offers the further benefit of aggregating research findings and media reports from a variety of sources, serving as a resource locally, as well as for the broader community of transportation practitioners (Mobility Lab 2013b).

Multi-modal accommodations in the Clarendon neighborhood in Arlington County.

Boulder's Reporting on Implementation Progress

Another key aspect of analysis and evaluation emerges from the City of Boulder. Reporting on progress toward implementation can be important both internally within the jurisdiction, as well as for potential funders, advocates, the public, and others. Boulder's most recent reporting effort is the *Transportation to Sustain a Community: A Report on Progress*, completed in 2012.

The report is not specific to complete streets, but drawing on Boulder's multi-modal approach, the report offers performance information across modes and across the community that ties directly to the intentions of the 2008 *Transportation Master Plan (TMP)*. A critical piece of performance data relates to Boulder's intent to limit vehicle miles traveled (VMT) to 1994 levels. Figure 10 includes a series of graphs from the report, including one showing the City's VMT performance thus far and indicates that this goal has been largely achieved, with VMT remaining significantly less than projected. Boulder has also achieved reductions in single occupant vehicle mode share since 1991, though reductions are a bit lower than needed to achieve the *TMP* goal of 25% single occupant vehicle mode share.

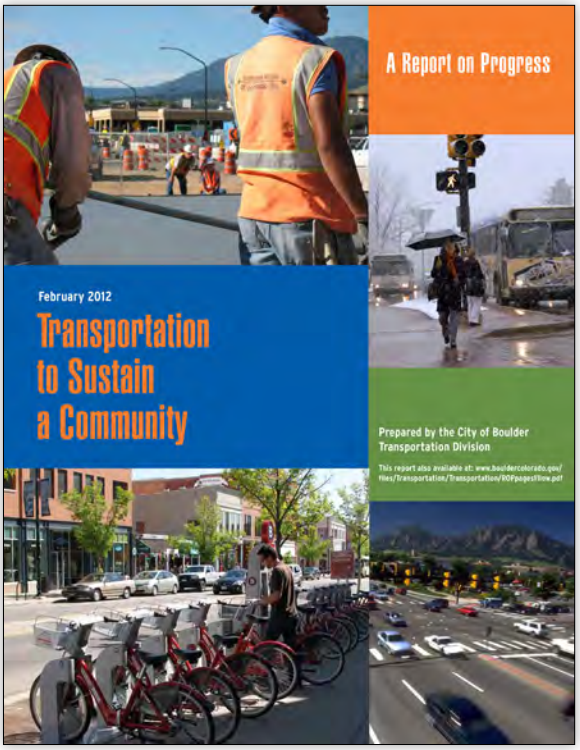


Figure 9. Transportation to Sustain a Community: A Report on Progress (2012).

Data for the report comes from a variety of sources, including the City's own metrics programs, which is informed by vehicle and bicycle counts, transit ridership, travel time analyses, Census data, as well as locally conducted travel surveys (City of Boulder 2012).

The graphs noted above and other content in the plan are highly accessible, simple, and attractive. The content is largely accessible to a general public audience and is organized in a manner that tells the transportation progress story through some text blocks, but also through infographics, photos, call-out boxes highlighting key content, and quick facts and quotes in large text. The report also has a Boulder transportation timeline that runs across the bottom of pages and continues throughout the document. Sample pages (Figures 11-14, next page) from the document show the range of content and graphic qualities of the document.

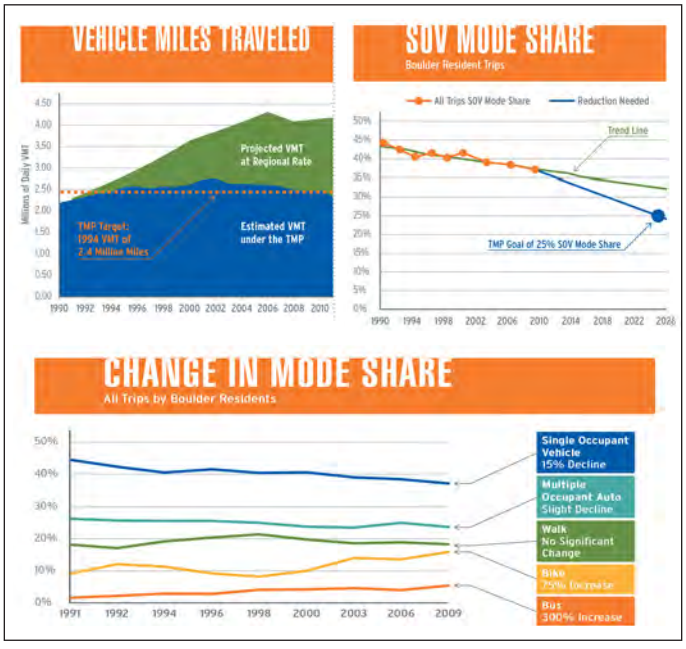


Figure 10. Clear, simply infographics in the *Transportation to Sustain a Community Report* illustrate long term performance.

Overall, the production of a high quality progress report offers a valuable check on the City's efforts to implement its *TMP*, but also offers a critical means of articulating to local and other audiences that progress is occurring and that transportation facilities and investments are producing both statistical and visible outcomes in the community.

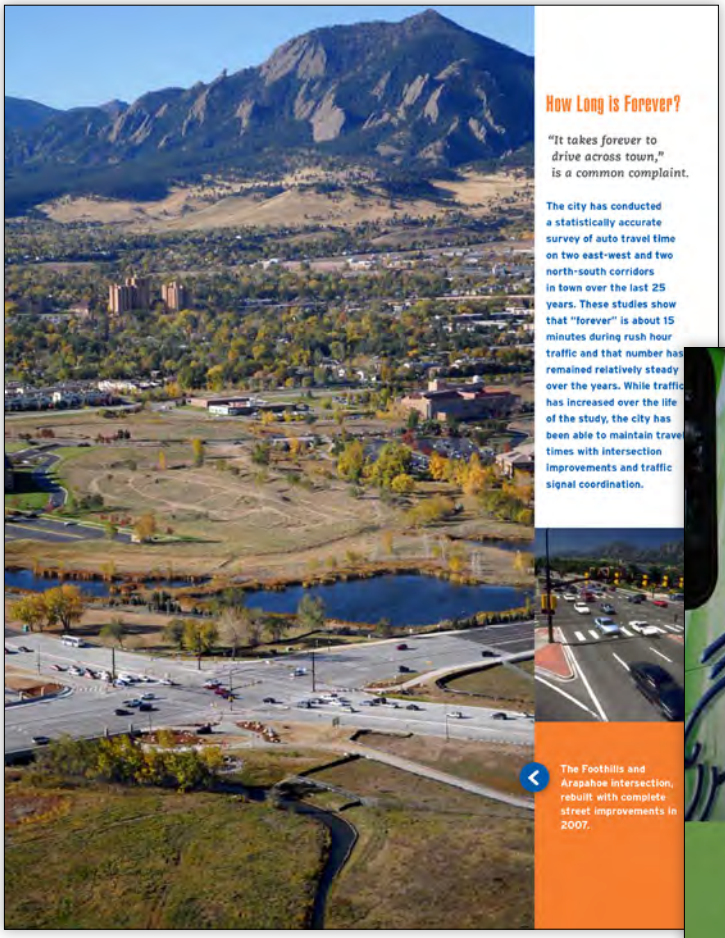


Figure 11. (Above) This compelling full page graphic responds to a commonly noted public concern, provides relevant data, and uses a beautiful photo to highlight a recent transportation project, as well as show the community context.

Figure 12. (Below) This page is an example the report's approach to offering key summary information and facts to highlight relevant content, in this case about the transit system.

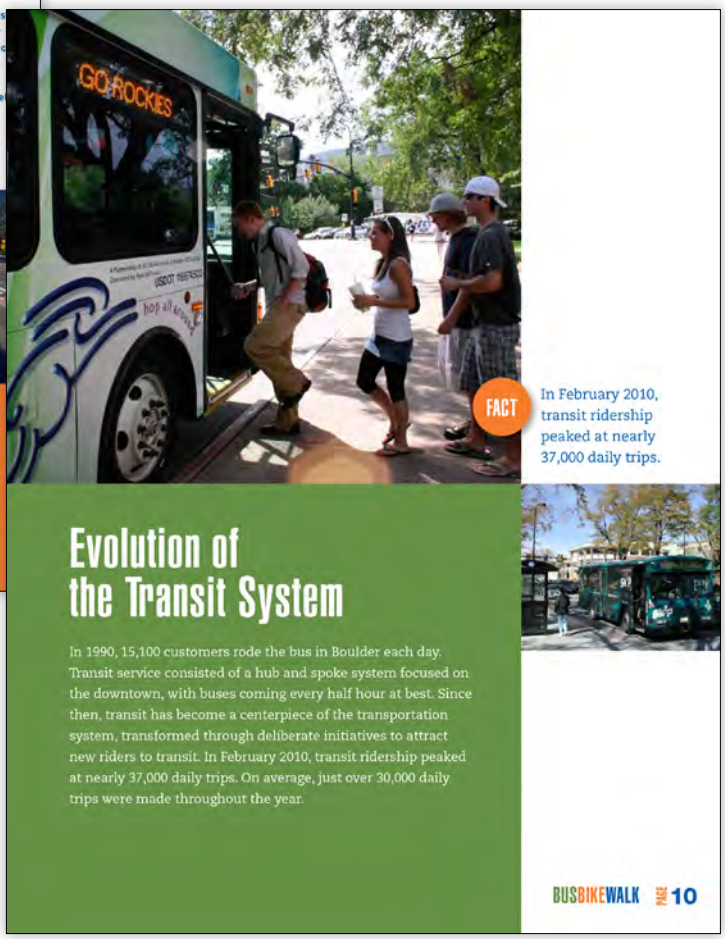


Figure 13. (Above) This page is the first in a brief section focused on Completing the Streets. It highlights *TMP* driven efforts to enhance system and network connections, specifically focusing on cross-town corridors. The page illustrates the integration of text and graphics, as well as the running transportation timeline along the bottom of the page.

Figure 14. (Below) This page from the end of the document is an excerpt from a discussion of future transportation issues. The text responds to key concerns and potential future challenges and provides an aspirational closing discussion about the City's transportation future.

New Haven's SeeClickFix Program

A final example in this section contributes to analysis and evaluation in a different way. New Haven's SeeClickFix Program provides offers an opportunity for residents to identify key issues in their neighborhoods. While not specific to complete streets, the tool allows users to identify infrastructure concerns, safety issues, and facility needs by location. SeeClickFix is a web-based tool that is available via a website or a as a smartphone app. Following a simple registration process, users are able to post their concerns, adding both narrative content and indicating the area of concern on a map. Users can vote for or comment on concerns raised by other users.

An interview with a local stakeholder suggested that the tool is widely used and that many residents use the smartphone app, including persons who do not otherwise have Internet access. Because of New Haven's strong neighborhood organization and identity, facilitated in part by the large Board of Alderman representing specific geographic areas, the SeeClickFix program is helpful in empowering local scale engagement on neighborhood concerns. Because SeeClickFix is integrated with the City's Public Works request system, users receive quick feedback via SeeClickFix related to their concerns. City staff are able to provide updates on progress and indicate when issues have been resolved. SeeClickFix was founded in New Haven and as of 2009, is currently being used in over 160 local governments.

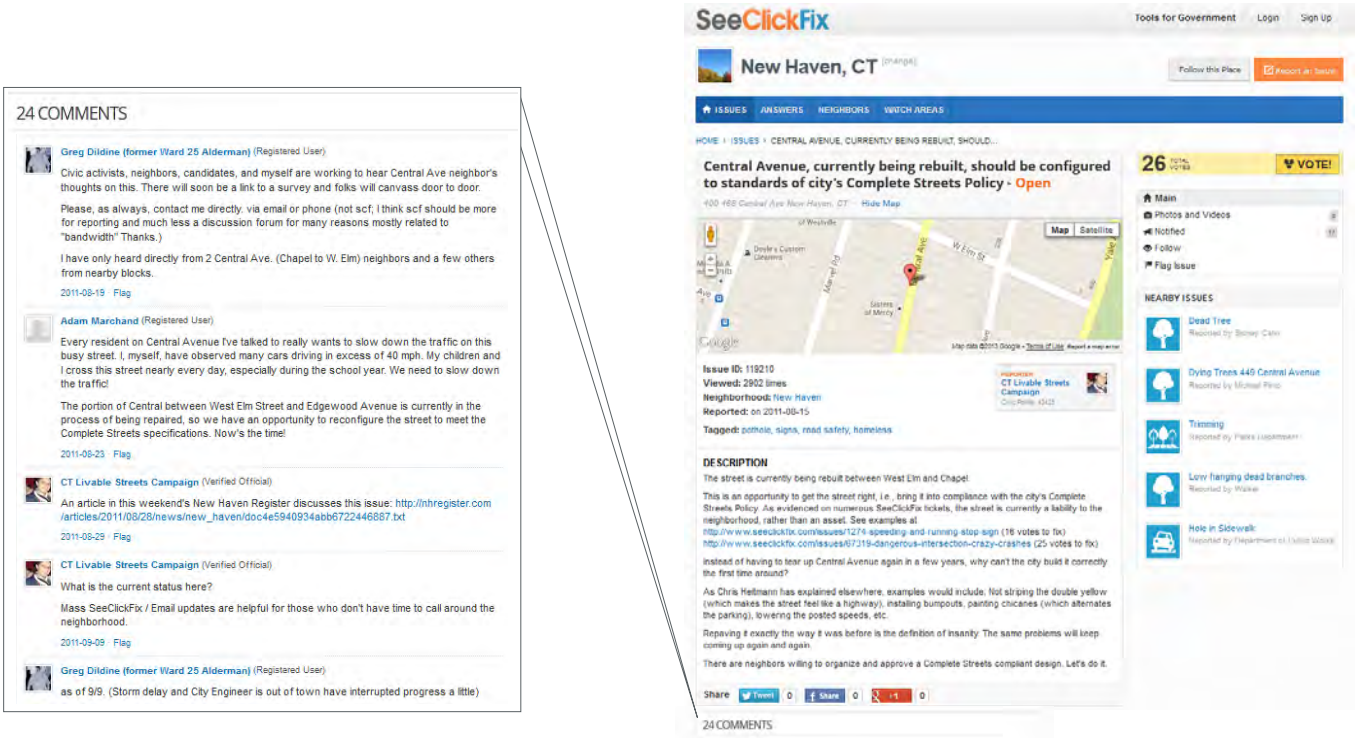


Figure 15. This screen shot from New Haven's SeeClickFix website highlights a recommendation from a user and shows the comments, voting, and map functions of this tool.

Audubon Avenue in New Haven is a woonerf, incorporating traffic calming measures and providing shared space for pedestrians, cyclists, and motorists.

BP 4

Project Delivery and Construction

This fourth best practice area shifts the focus to the project scale, exploring efforts to enhance, facilitate, and/or streamline project delivery and construction. Drawing on examples from numerous jurisdictions, this section explores project-level implementation. Case examples illustrate approaches to designing projects, generating opportunities for complete streets projects as a part of routine roadway maintenance, flexibility in piloting new complete streets approaches, and approaches to project-scale public engagement. Each of the case examples provides insights into the day-to-day decision making and strategies that jurisdictions are using to advance complete streets implementation.

Charlotte Tradeoffs Matrix

As discussed earlier in the institutionalizing best practice section, Charlotte's *Urban Street Design Guidelines (USDG)* have played a major role in integrating complete streets into the way that the Charlotte plans for, designs, funds, and constructs its transportation system. The USDG's tradeoffs matrix is used primarily at the project scale, allowing for consideration of a variety of design features. The matrix, which spans nearly 20 pages in the *USDG*, offers a systematic means of examining the perspectives of multiple users of the city's streets relative to potential design elements.

"MORE OFTEN THAN NOT...

different stakeholders will express different interests of perspectives related to "good" street design. This means that some design elements will benefit some users more than others and that some design elements that benefit one user group may actually work to the detriment of other users. That, along with the likelihood of right-of-way constraints, heightens the need to thoroughly assess tradeoffs between different perspectives during the design process."

source: Urban Street Design Guidelines 2007, 29

Users include pedestrians, cyclists, motorists, and transit. Here transit is considered from a transit operators' perspective. An additional notable user is neighbors. Consideration of impacts on neighbors clearly reflects Charlotte's thinking about streets as public space and about the coupled nature of transportation and land use. Figure 15 shows highlights from the matrix, which organizes potential design elements to accomplish a variety of goals, such as: (1) pedestrians want buffering from cars, (2) cyclists want safer crossings, and (3) motorists want reduced delays/increased capacity.

Simple color-coded diamonds are used to indicate the impact on each user group associated with dozens of design elements (e.g. planting strips, buildings oriented to the street, refuge islands, reverse angle parking, roundabouts, large curb radii at intersections, bus shelters).

Figure 2:1

Design Element Matrix – Different User Perspectives

		Pedestrians	Cyclists	Motorists	Transit*	Neighbors
Pedestrians Want Buffering from Cars						
Consider some mix of the following elements to create a buffer:						
Planting Strip	The wider the better, since wider strips allow trees to grow	◆	◆	◆	◇	◆
Amenity Zone	Use where high pedestrian volumes are likely, particularly in combination with on-street parking	◆	◇	◆	◆	◆
Wide Sidewalk	Back-of-curb (6' min.) may be allowable in retrofits, if combined with bike lane or on-street parking	◆	◇	◇	◇	◆
Bike Lanes	Provide "extra" buffering, in combination with other elements	◆	◆	◆	◆	◆
On-Street Parking	Helps shield pedestrians from moving traffic	◆	◆	◆	◆	◆
Trees	Need a 6'-8' minimum planting strip or treewells in amenity zone; 8' is the minimum for large maturing trees	◆	◆	◆	◆	◆

◆ - Positive Impact ◆ - Negative Impact ◆ - Mixed Impact or Use With Caution ◇ - Neutral

		Pedestrians	Cyclists	Motorists	Transit*	Neighbors
Cyclists Want Safer Crossings						
Consider the following elements to increase cyclists' visibility:						
Bike Boxes	Brings cyclists into drivers' sight; allows cyclists a headstart through an intersection; should provide bike lane approaching intersection	◆	◆	◆	◆	◇
Drop Bike Lane at Intersection	Achieves same as bike box, but without designated space; casual cyclists may feel less comfortable, although it is considered safer to drop the lane and have cyclists merge earlier for left-turns if there is no bike box	◆	◆	◆	◆	◇
Leading Bike Signal	Allows cyclists a headstart through the intersection; requires driver and cyclist education	◆	◆	◆	◆	◇
Short Blocks	Create more intersections, but potentially smaller intersections; more opportunities to avoid high volume routes; can potentially calm traffic and allow more opportunities for safe crossing treatments	◆	◆	◆	◆	◆

◆ - Positive Impact ◆ - Negative Impact ◆ - Mixed Impact or Use With Caution ◇ - Neutral

		Pedestrians	Cyclists	Motorists	Transit*	Neighbors
Motorists Want Reduced Delays/Increased Capacity						
The following elements can increase a street's capacity and/or potentially reduce motorists' delay:						
More Travel Lanes	Each additional travel lane increases the street's capacity, especially at intersections; the mix of through and turn lanes can, up to a point, allow an intersection to process more traffic	◆	◆	◆	◆	◆
Design Consistency	By providing a consistent design (number of travel lanes, i.e.), motorists don't have to unexpectedly stop or merge; however, this may be difficult to achieve	◆	◆	◆	◆	◆
Grade Separated Intersections	Allows uninterrupted flow; particularly useful for high volume intersections, but destroys urban context for other users	◆	◆	◆	◆	◆
Unsignalized Intersections	May mean less delay for the higher-volume leg, but more delay for the lower-volume leg; in general, fewer signals means less delay on thoroughfares, but may also mean less connectivity	◆	◆	◆	◆	◆

◆ - Positive Impact ◆ - Negative Impact ◆ - Mixed Impact or Use With Caution ◇ - Neutral

Figure 16. Excerpts from the Design Element User Perspectives Matrix from Charlotte's *Urban Street Design Guidelines*.

Advancing Complete Streets through Maintenance Projects in Hennepin County

Roadway maintenance projects offer a critical opportunity to incorporate complete streets elements into the right of way. An example from Hennepin County clearly illustrates effective approaches to interagency communication and coordination that can help typical road maintenance projects to evolve into successful complete streets projects.

In the summer of 2012, two heavily-traveled Hennepin County roads, Park Avenue (CSAH 33) and Portland Avenue (CSAH 35), were slated for mill and overlay maintenance projects. Mill and overlay projects are typically characterized as those where the asphalt is torn up, amended, relayed, and the road is restriped as it was before new asphalt was applied. Park and Portland Avenues are paired one-way streets that provide critical access into and out of downtown Minneapolis for south Minneapolis neighborhoods and adjacent suburbs. Vehicular average annual daily traffic counts were as high as 11,000 in some areas along the avenues (MnDOT 2009), with average daily bicycle counts of 600 on each avenue (Kerr 2012). Prior to completing the project, the roadways had three lanes, as well on-street parking and a left side bike lane for most of the corridor.

As this project was being planned, the critical nature of these avenues as key transportation corridors for both the City of Minneapolis and Hennepin County was recognized. A key concern was the left side bike lanes, which many users felt were inadequate and unsafe (Jones 2012). Originally slated for early summer

Park Avenue where one lane of traffic was removed and a buffered bike lane was added.

An example of how the bike lane is striped through a busy intersection.

2012 construction, the project was delayed "so the city and county could analyze how these streets handle traffic and see if improvements can be made after they're repaved. As a result of this partnership, significant restriping improvements are planned to provide for safety while also addressing motor vehicle speed and livability issues" (Hennepin County & City of Minneapolis 2012). The County and City held joint public meetings to better understand what residents and other stakeholders wanted, and they worked together to develop a flexible design solution to increase the bicycle lane visibility and reduce speeds-limits along the corridor.

City of Minneapolis staff, Hennepin County Commissioners, and bicycling advocates laud Park and Portland Avenue projects as great examples of how the County's complete streets policy has positively influenced the processes and outcomes of transportation projects in the County. The two jurisdictions communicated about their project priorities and were able to develop a design solution that would function for the range of users in the corridor.

Key Changes along Park and Portland Avenues

1. 65% of the corridor length will be restriped from three lanes to two through lanes with some turn lanes. The Downtown and Lake Street areas will retain three lanes.
2. 70% of bike lanes will be moved from the left side to the right side of these two streets.
3. Right side bike lanes will be striped the full length of Park Avenue and south of 35th Street on Portland Avenue. Left side bike lanes are retained on Portland Avenue from Washington to 35th Street.
4. Bicycle lanes will include a buffered area to better separate bicycles from vehicles. Improved connections and crossing treatments are planned to and from the Midtown Greenway.
5. Parking is retained for most areas. Some limited parking restrictions will be needed at selected intersections to accommodate turn lanes.
6. Pedestrians will have shorter crossing distances in the segments with two through lanes.
7. Speed limit will be lowered from 35 to 30 mph with traffic signal re-timing and new signs.

source: Hennepin County & City of Minneapolis 2012

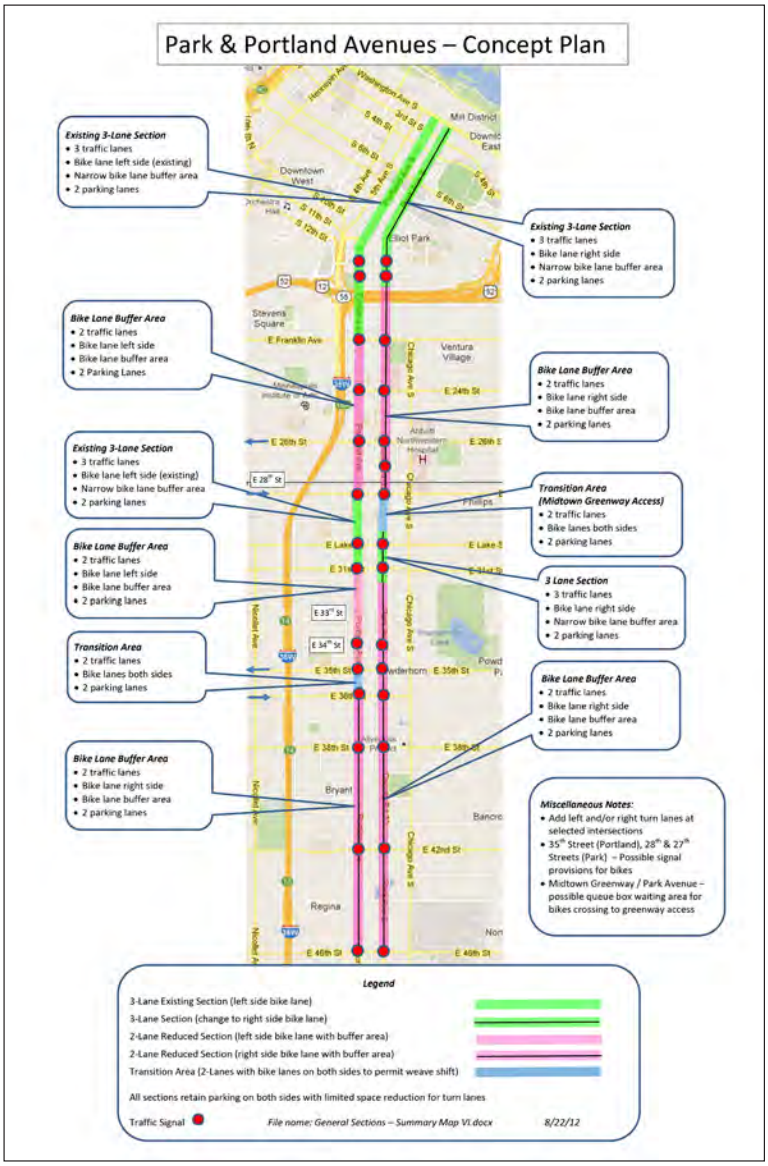


Figure 17. Park and Portland Concept Plan and Key Elements communicated jointly by Hennepin County and the City of Minneapolis.

Madison's Project Scale Transportation Innovation

Another example of project-scale decision making comes from Madison, Wisconsin. Even before the complete streets movement, Madison was implementing innovative non-motorized transportation infrastructure throughout the community. The well-established culture of bicycling and walking in Madison, and the City's departmental structure, allows the City to implement and test various types of street design innovations, such as bike boulevards, pedestrian activated crossings, and colored bike boxes. Following on its strong base of transportation innovation, the City has employed a number of innovative approaches to integrating bicycles and pedestrians on its roadways. Drawing on established standards from the Association of State Highway Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and the Wisconsin Department of Transportation, as well as innovations from European and other communities, Madison has tested a wide range of facilities (e.g. bike boxes, crosswalks) and design features including signage, signals, and striping. Williamson Street near the state capitol is one street that has offered a valuable testing ground for new approaches, including bike boxes, on-road pathways, and combined bicycle-pedestrian trails. Because the road width varies in the corridor, design approaches have also varied to respond to right-of-way and context. As an example, at one intersection, pilot bike boxes were initially implemented with red paint, but after community response and evaluation of this approach, the City modified the bike boxes to green, in accordance with NACTO guidelines. In another example, pilot testing and evaluation in the community revealed that asphalt seal coat, rather than paint, for striping is more durable in the cold and snowy winter climate. The City's willingness and ability to test innovative transportation infrastructure has produced a high-quality non-motorized transportation system and has also allowed the City to tailor its approach to the unique characteristics of its various neighborhoods and roadways.

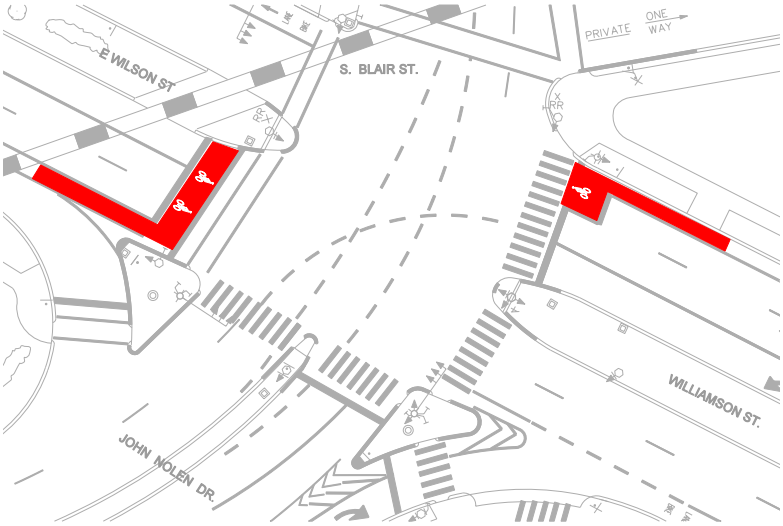


Figure 18. Illustration of the red bike boxes on Williamson Street.
source: City of Madison 2010

Figure 19. Bird's eye view of the red bike boxes on Williamson Street.
source: Google Maps

Dubuque's Historic Millwork District Project Engagement

The City of Dubuque's Historic Millwork District is a recently renovated 12-block area in downtown Dubuque. The district is home to a number of industrial and commercial businesses, and the future home of multifamily housing that will occupy many of the refurbished historic buildings. This project, while not originally conceptualized as a complete streets project by the community, has been qualified as a complete streets project by the Federal Highway Administration (FHWA) when the City received a 5.4 million dollar TIGER grant to support the project (U.S. DOT 2010). From a project delivery and construction perspective, this project illustrates the importance of early and consistent engagement in implementing complete streets projects. From the conceptual phase to construction and implementation of the *Historic Millwork District Master Plan* (2009), stakeholder engagement has been an important and influential part of the process. Dubuque Main Street, a non-profit organization "dedicated to the development and ongoing support of downtown as the place to live, work, and play" (Dubuque Main Street 2013) worked with businesses and the City to develop a vision for the Historic Millwork Area. This vision set the stage for continued partnership and communication throughout the life of the project. Interviewees, from City staff to business owners and business representatives, mentioned that the success of the Historic Millwork District is largely due to how and when people were engaged in the process. "We were there from the start, and we still meet with the City as they finish some of the implementation," noted one business owner. The consulting team, City staff, business organizations, and other interested parties met on a consistent basis to talk about everything from the overall district plan to design details and the phasing of construction. For example, there were a number of meetings when business owners and the design team talked through intersection needs for freight vehicles. Bump outs were proposed throughout the district as a means to enhance pedestrian safety, but the size and design were ultimately modified based on feedback from business owners about the need to maintain sufficient access for freight vehicles. This inclusive process was helpful in ensuring that the streets work for a variety of users, and it has helped in building relationships between the City, local businesses, and residents.

Pedestrian and traffic calming features are seen throughout the Historic Millwork District.


This image illustrates how different uses and needs have been accommodated. On the left is a surmountable curb for trucks to dock. In addition, sharrows indicate bikes and autos share the same space, parking for commercial needs, and curb cuts are designed to be ADA compliant.

BP 5 Promotion and Education

A fifth best practice area in complete streets implementation goes well beyond the details and practicalities of developing complete streets plans, policies, design guidelines, and projects. The study revealed that complete streets implementation benefits from being coupled with efforts to promote and educate the community about non-motorized transportation and transit options, safety, and impacts. The cases in the study utilize a number of approaches to reaching a variety of audiences. Promotion and education has helped to raise consciousness of the safety of all users in the transportation system, has made connections between active transportation and health, and has helped attract new users for bicycle, pedestrian, and transit facilities.

Rochester Educational Campaign

Education about multi-modal traffic safety is an important part of the complete streets implementation efforts in Rochester. The Rochester-Olmsted Planning Department staff recognizes complete streets implementation is not just about developing infrastructure, but it is also about educating residents and raising awareness around key issues such as pedestrian, bicycle, and vehicular safety. "It is about encouraging a culture of mutual respect," noted one staff person. To raise awareness and encourage better knowledge of rules of the road, the Active Living Rochester partnership initiated the SEE.SAFE.SMART. ROCHESTER campaign.

Active Living Rochester is a partnership initiative of Rochester-Olmsted Planning, Olmsted County Public Health, Rochester Public Works, and CaridoVision 2020/Mayo Clinic (Olmsted County 2013a). The SEE. SAFE.SMART.ROCHESTER campaign was initiated in 2010 with the goal to "foster more active, healthy lifestyles while raising awareness that safety is still the number one priority on the city's roads, paths and sidewalks" (Olmsted County 2013b). The campaign is supported by Blue Cross and Blue Shield of Minnesota and the campaign materials were produced with support from graphic designers and a photographer to capture images of active transportation in the community (Olmsted County 2013b). The campaign advertisements appeared on billboards, buses, and in Rochester skyways and subways (Olmsted County 2013c). Other campaign collateral such as banners, slap bracelets, calendars, and safety colored shirts were geared toward younger users of the transportation system and were provided to local elementary schools (Olmsted County 2013c). This safety campaign is recognized as an important part of Rochester's complete streets efforts (Figure 20).

Figure 20. Example collateral from the SEE.SAFE.SMART.ROCHESTER campaign featuring local residents.

Mode-specific Education in New Haven

New Haven has also had a strong focus on safety in its efforts to advance complete streets. Coupled with infrastructure improvements and policy changes, the City of New Haven advanced the Street Smarts campaign with the intent of drawing motorists' attention to other users on the street. The campaign has three components targeting different modes: DriveSmart, BikeSmart, and WalkSmart. The campaign highlights basic safety information including relevant traffic laws, as well as safety practices that can reduce the likelihood of accidents (City of New Haven 2013).

Branding has contributed to the visibility and success of the Street Smarts program. The City developed a logo, informational materials, promotional items (e.g. stickers, magnets, brochures) and a pledge of commitment that could be submitted to the Mayor's Office in exchange for a magnet (Figure 21).

Figure 21. The Smart Driver Pledge encourages an active commitment to advancing safety and livability for users and neighborhoods.

Following Bike Smart and WalkSmart campaigns have produced additional mode-targeted resources, including *Smart Cycling: A Handbook for New Haven Bicyclists*. The 50-page guide highlights New Haven's bicycle facilities, relevant laws, bicycle gear, maintenance tips, ways to avoid bike theft, and what to do in the event of crash (City of New Haven 2011). The Why Bike? section offers encouragement for current and prospective cyclists, highlighting 10 reasons to bike (Figure 22).

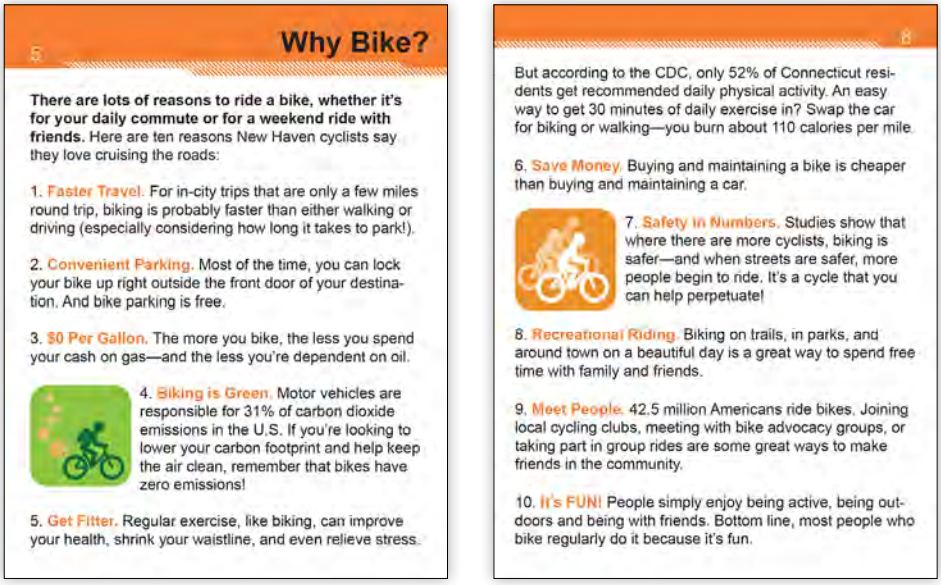


Figure 22. Excerpts from the *Smart Cycling* document highlight numerous benefits of cycling.

The City of New Haven has also partnered with Yale University, which is located in the community, to further advance safety. Yale's companion Smart Streets program specifically targets students and uses a similar mode-focused approach (Yale University 2013). The Smart Streets website uses clear, attractive, and fun animation to illustrate the characteristics of cyclists, pedestrians, and drivers (Figure 23).

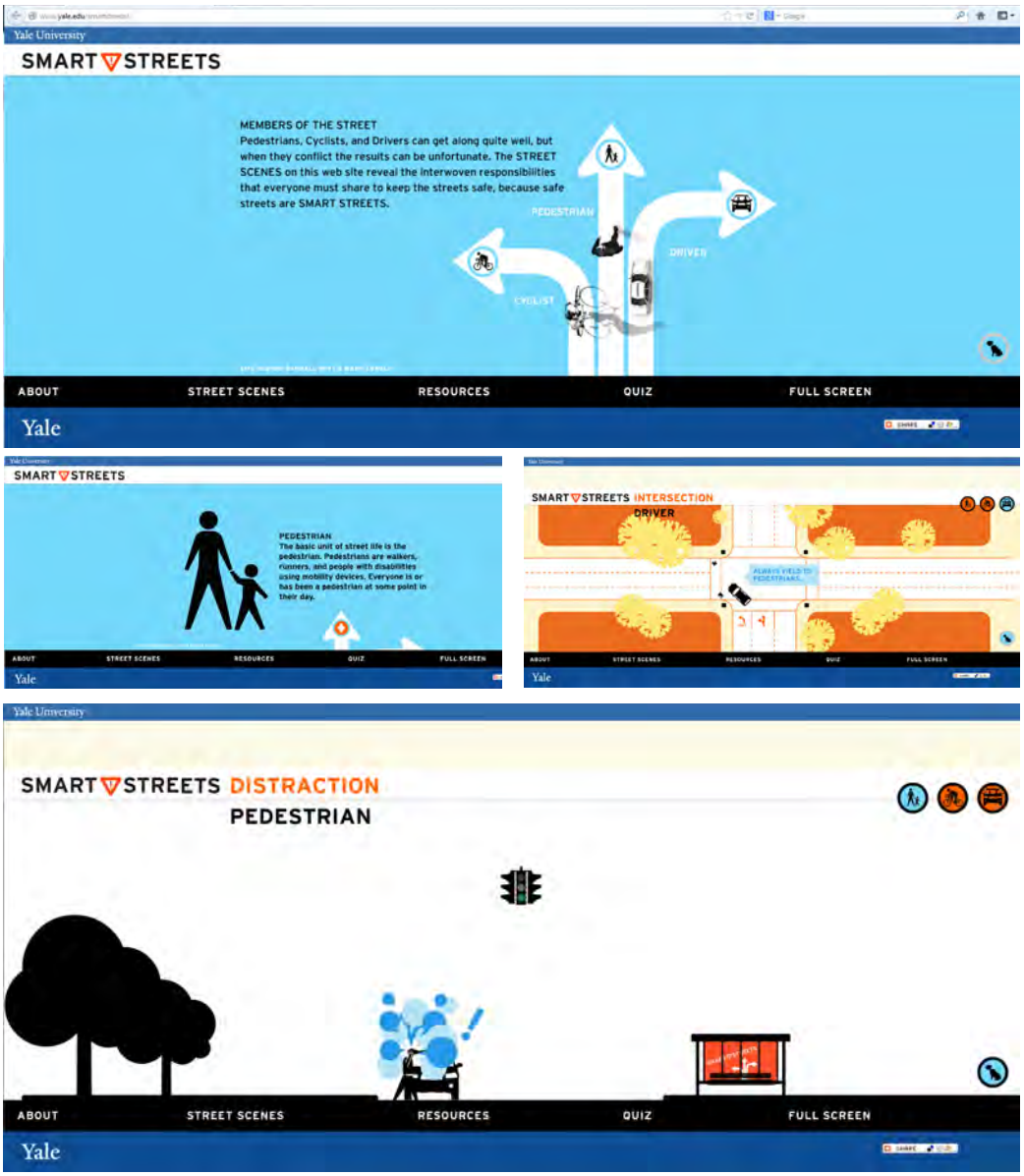


Figure 23. Screen shots from Yale University's Smart Streets animated website provide just a glimpse of the functionality and information provided. A key aspect of the website is the ability to explore the perspectives and experiences of pedestrians, bicyclists, and motorists and consider a variety of locations and behaviors that pose potential safety concerns.

The website also allows users to explore street scenes that illustrate potential conflicts among users, including intersections, crosswalks, signals, and passing. Behavioral issues such as intoxication and distraction are also addressed.

Arlington County's Car-Free Diet

An additional promotional campaign example comes from Arlington County. The County has a long history of advancing complete streets and has a well-developed multi-modal system. The focus in this campaign, beyond introducing safety and multi-modal considerations, is to focus more fully on modal shift and getting residents and workers in the community to think about using other modes including rail, bus, walking, bicycling, bikeshare, carshare, or taxicabs. Arlington County Commuter Service's Car-Free Diet campaign promotes the question, "What's Your One?" – the one trip that could be taken without a car (Arlington County 2013).

Figure 24. Example logos of the Car-Free Diet Campaign

The campaign features logos, ads, short videos highlighting residents talking about their "one trip," and a Car-Free Diet Show online sketch comedy series featuring former Car-Free Diet Skeptics. Additional videos are posted on the Car-Free Diet program's YouTube channel. Videos highlight user experiences and perspectives, often using humor, such as in a video entitled "Cadillac Lover Goes Car Free" (Car Free-Diet 2013). The Car-Free Diet website includes a blog, Car-Free Diet Calculator to estimate calories burned, money saved, and carbon dioxide emissions reduced associated with reducing car trips. The website also provides information about Arlington's Urban Villages, highlighting multi-modal transportation options in some of the county's neighborhoods, located along the Metro rail lines. The Car-Free Diet program also has its own Twitter and Facebook feeds. Individuals can sign up for an initial Seven-Day Car-Free Diet Plan to receive a book and t-shirt. Businesses can sign up as well. Overall, this promotion and education effort

is an example of a multi-media campaign that is entertaining, yet informational in building awareness and confidence in opportunities to use transportation modes other than personal automobiles.

Figure 25. Additional images from the Car-Free Diet campaign show a variety of transportation users and emphasize the benefits of shifting to other modes.

Albert Lea's National Vitality Center

The City of Albert Lea provides an example of how a local organization, the National Vitality Center, is helping to raise awareness of and support for complete streets. In 2009, the City of Albert Lea was chosen as a pilot city for the AARP Blue Zones Healthy City Makeover initiative. With the goal of improving the health and projected life expectancy for people of all ages who work and live in the city, the Blue Zones project assessed many aspects of life in Albert Lea and suggested ways to increase healthy living in the community. One initiative of the Blue Zones project was to encourage residents to engage in daily physical activity. The focus on active lifestyles, in part, led to the development of the City's complete streets subdivision ordinance change in 2009, which required complete streets be considered in all new developments.

At the conclusion of the 10-month Blue Zones project, local leaders wanted to sustain some of the momentum generated during the Blue Zones project by creating the National Vitality Center. The Center is comprised of local leadership with representatives from the City of Albert Lea, Freeborn County, and the health and business sectors, and its goal is to make "broad-based community wide strategies that make the healthy choice the easy choice, and encouraging connectedness in all sectors of our community" (National Vitality Center 2013). Through public service announcements on television and radio, newspaper articles, and community events, the Center works to educate residents, elected officials, and others on a myriad of topics such as bicycle and vehicular safety, complete streets, healthy food choices, and worksite wellness programs. Local leaders report that the Center's efforts help sustain the Blue Zones project momentum and keep healthy choices in the community consciousness.

The National Vitality Center also sponsors community events like an annual bike rodeo. The bike rodeo is a well-attended community event with a variety of activities and information related to transportation safety. The intent of the event is to bring together residents, increase understanding of bike safety, and increase the visibility of the City's efforts to improve its streets and multi-modal infrastructure.

Mission:
To establish and encourage an ongoing community focus and commitment to individual wellness and personal well-being.

Vision:
To create permanent systematic environmental and policy changes that lead to a healthier environment: creating opportunities for physical activity and healthy eating by positivity encompassing an individual's community, habitat and purpose.

National Vitality Center Board of Directors
Mayo Clinic Health System, Freeborn County Public Health, City of Albert Lea, Albert Lea School District, United Way of Freeborn County, Albert Lea Family Y, Albert Lea/Freeborn County Chamber of Commerce, Albert Lea Convention and Visitor's Bureau, Freeborn County Historical Society, Freeborn County Family Services Collaborative, and Senior Services.

Figure 26. The mission, vision and composition of the National Vitality Center. (National Vitality Center 2013)

Simple changes like signage and striping are helping to change Albert Lea's auto-centric to a more multi-modal one.

A highly visible pedestrian crossing connects employment centers to a surface parking lot along Albert Lea's Front Street. The crossing sign lights when activated by a pedestrian.

BP 6 Funding

The final best practice area focuses on funding for complete streets projects. This section highlights examples from a variety of communities that are at various points in their efforts to implement complete streets. Funding can often be a critical barrier to advancing complete streets projects, but a number of jurisdictions have found ways to leverage existing funds, as well as generate new funding that can be targeted to complete streets projects.

Cost Sharing in Albert Lea

One of the potential sources of funding for complete streets design elements is adjacent affected property owners, as in the case of Albert Lea. Along with its subdivision ordinance change, which specifies that complete streets are required as part of any new development, the City has also changed its assessment practices. Assessments are frequently used by municipalities as a way to share the cost of implementing new or improved infrastructure. Like other communities, the City of Albert Lea requires that land owners contribute to the costs of infrastructure. Prior to the policy change, property owners would incur 100% of the cost of sidewalk installation. City staff noted the assessment was one of the most challenging obstacles in creating a connected pedestrian network throughout the City, as property owners did not want to bear the full cost of new sidewalks. This assessment practice was modified in 2006, and it is now a 50%-50% cost share between the City and the adjacent property owner for new sidewalk installation (City of Albert Lea 2006). Additionally, if anything goes wrong in the first 25 years of the life of the sidewalk, the City will pay full costs of reconstruction; after 25 years it is a 50%-50% cost share. This policy changed has helped garner public acceptance of sidewalk installation and it has helped the City of Albert Lea work toward a more complete pedestrian network.

A newly renovated bridge on Lakeview Boulevard in Albert Lea provides wider sidewalks and ramps that are designed to be ADA Compliant.

Engaging Private Sector Development in Charlotte

The City of Charlotte is also able to tap private funds to supplement public resources to develop complete streets projects. As a relatively fast growing community, 13th in the U.S. for metropolitan statistical area (MSA) growth in the 2000s (Charlotte Chamber n.d.), Charlotte is experiencing a large amount of development. At least a portion of that activity is occurring as redevelopment in existing neighborhoods, downtown, and along new light rail corridors such as the LYNX line that runs southwest out of downtown. By codifying the City's *Urban Street Design Guidelines* (2007) in local ordinances, Charlotte is able to use the private development process to advance complete streets. As development and redevelopment proposals are approved, local policies and negotiation can be used to acquire needed right-of-way and off-site improvements such as sidewalks and landscaping. The City's subdivision ordinance, tree ordinance, and land development standards, which include guidelines for street design and storm drainage, are key policy tools used to ensure that streets and the public right-of-way are designed to meet complete streets standards. While complete streets infrastructure developed under this approach can be piecemeal in the interim, such as when development projects slowly fill in a corridor, in the longer term the City is able to harness the resources of the development process to advance broader public goals. These private resources supplement complete streets project funding in the biannual Capital Improvements Program (CIP) and improvements that can be accomplished through City-initiated street improvements such as resurfacing.

On a new campus of the Central Piedmont Community College near downtown Charlotte, streetcar tracks have been installed in anticipation of future rail service.

Pedestrian and bicycle improvements were accomplished as new redevelopment has occurred near Metropolitan Avenue near downtown Charlotte.

Generating Local, Reliable Transportation Funds in Boulder

Boulder's more than two decades of work on multimodal transportation corridors has produced a robust transportation system with a now explicit focus on complete streets. A significant emphasis in ongoing implementation of the City's *Transportation Master Plan* (TMP) (2008) is on closing gaps and making connections across modes, as well as maintaining existing facilities. Boulder's well-developed transportation system plans have helped the community to be very successful in attracting federal transportation funds to support complete streets-related projects, but those funds amount to only 15 percent of Boulder's transportation budget. The full range of sources is illustrated in Figure 27.

Also notable in the pie chart is the significant use of locally generated funds, generated through a development excise tax, approved in 1998, and charged on new development in the city for related infrastructure needs. Funding also comes from a 0.6 percent local sales tax that was approved by voters in 1967. The sales tax represents a portion of a one percent tax, the remainder of which is dedicated to open space. The local dedicated funding sources have been important as operations and maintenance for the City's already well-developed system have grown from 60 percent in 2001 to 80 percent in 2010. The transportation sales tax has amounted to an average of 63 percent of the total budget in recent years (City of Boulder 2013).

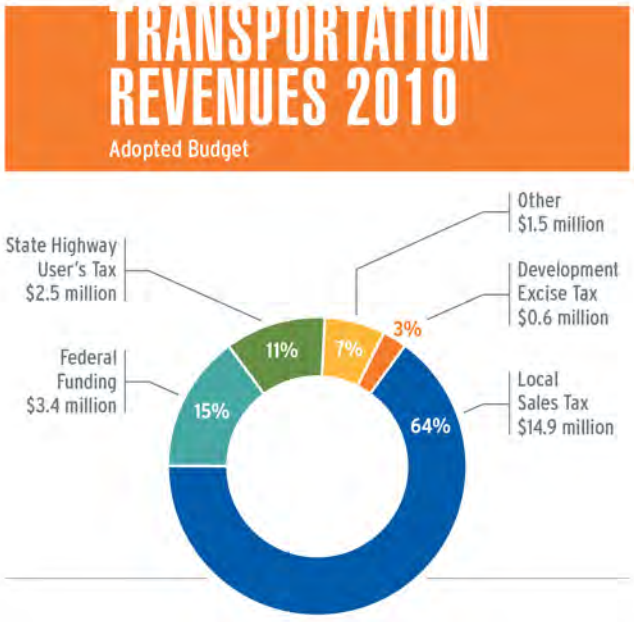


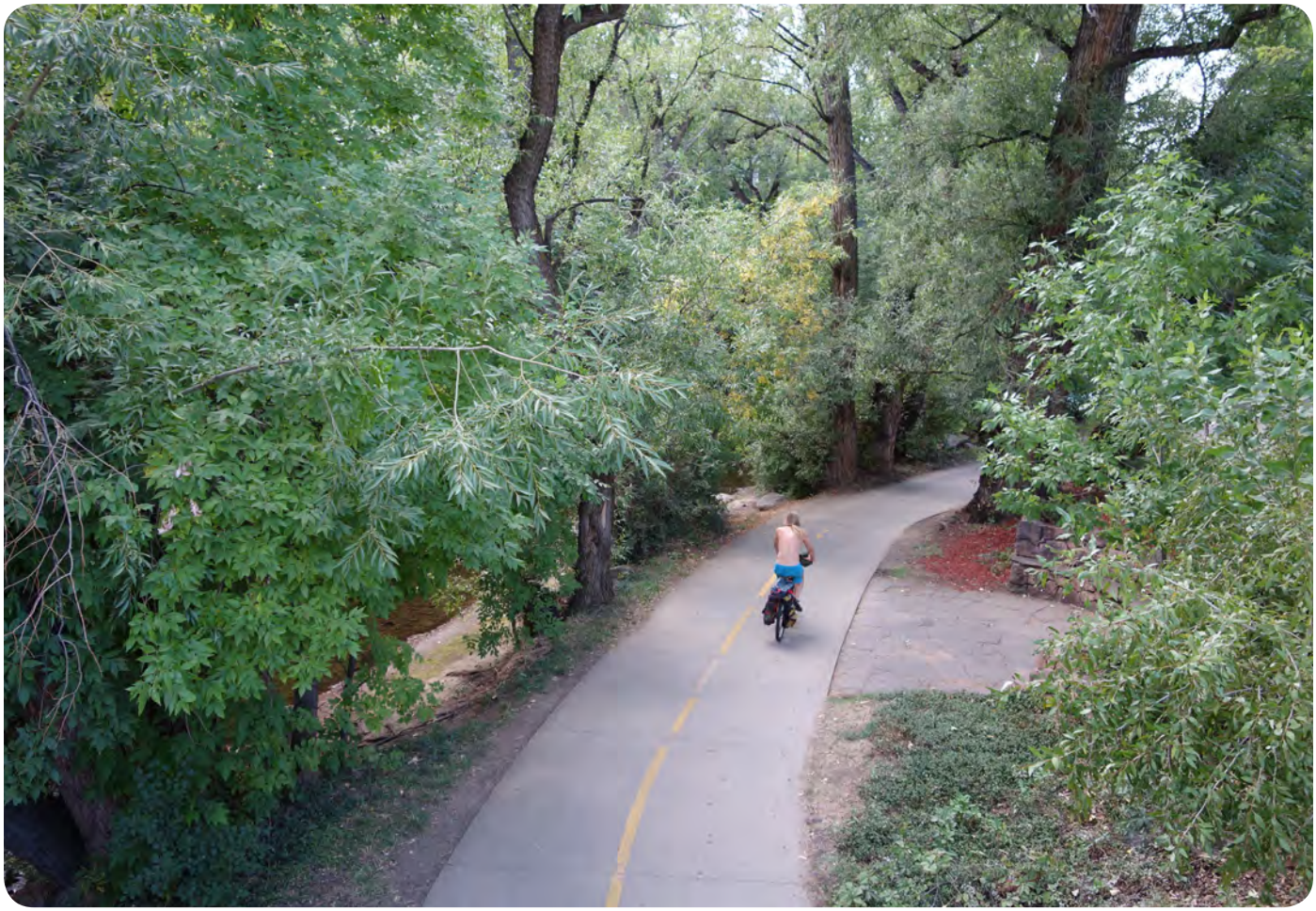
Figure 27. This chart highlights federal, state, and local funding sources for the $22.9 million Boulder transportation budget. source: T*ransportation to Sustain a Community: A Report on Progress*.

The local funding supply has given the City the ability to be opportunistic in pursuing funding partnerships and using its own investments to ensure that transportation and services, such as Denver Regional Transportation District bus service, meets local needs. Another local source of funding for bicycle and pedestrian facilities has been the City's Flood Control Utility. For many years, the City has worked with the utility to leverage flood control projects for broader community benefits and building out a system of greenways.

"WHILE NEW PROJECTS...

generally get the most notice, a majority of the Transportation Division's work is in operations and maintenance. Keeping the existing system safe and operating efficiently is the top priority of the City's TMP. "

source: City of Boulder interviewee



The Boulder Creek Multi-Use Path was constructed as part of a larger flood control project, in coordination with Boulder's Flood Control Utility. It provides a critical east-west connection through the city.

Tying Regional Transportation Funding to Complete Streets in the Columbus Region

A final funding best practice case example highlights the role of metropolitan planning organizations (MPOs) in advancing complete streets through the use of funding incentives. The Mid-Ohio Regional Planning Commission (MORPC) has played a lead role in advancing complete streets among communities in the Columbus, region. Its *Complete Streets Policy* (2010) and *Complete Streets Toolkit* (2012b) have offered important leadership and have been influential in informing communities about complete streets options.

MORPC Complete Streets Definition, Vision, and Goals

Definition:

Complete streets are roadways designed to safely and comfortably accommodate all users, including, but not limited to motorists, cyclists, pedestrians, transit and school bus riders, delivery and service personnel, freight haulers, and emergency responders. "All users" includes people of all ages and abilities.

Vision/Purpose:

To create an equitable, balanced, and effective transportation system where every roadway user can travel safely and comfortably and where sustainable transportation options are available to everyone.

Goals:

1. To create a comprehensive, integrated, and connected transportation network that supports compact, sustainable development and provides livable communities.
2. To ensure safety, ease of use, and ease of transfer between modes for all users of the transportation system.
3. 3. To provide flexibility for different types of streets, areas, and users

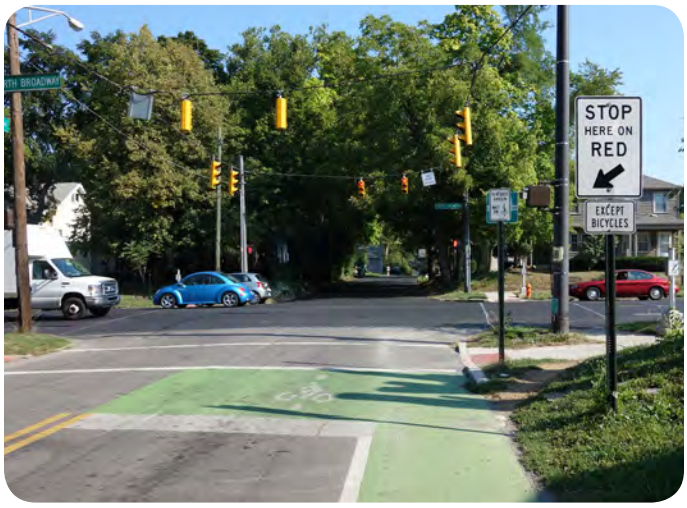
source: Mid-Ohio Regional Planning Commission

A key aspect of the 2010 policy is its applicability. It "applies to all projects, including the new construction, reconstruction, rehabilitation, repair, maintenance, or planning of roadways, trails and other transportation facilities that will use federal funds allocated through MORPC" (MORPC 2010b, 2). In addition, for each project submitted for federal funding through MORPC, project proposers "are responsible for determining for each project and within the context of the regional long-range plans, the most appropriate facility or combination of facilities to meet the Complete Streets policy" (MORPC 2012c, 3). MORPC staff members are available for consultation and technical assistance to communities as they consider ways to meet the complete streets policy and develop their funding proposals. A C*omplete Streets Checklist for Project Sponsors* has been developed to accompany the policy and assist project proposers in "defining and designing their project in adherence with the policy" (MORPC 2010a, 1). The checklist includes nine pages of questions and additional resources including recommended public input practice, a list of potential stakeholders, sample cross-sections, and design standards.

The box at the right includes a list of sample questions from the *Checklist*. In addition to completing the *Checklist* form, proposers also submit information such as functional classification, current/proposed characteristics (e.g. ROW width, speed limit, bike lane widths), and crash data.

The *Checklist* offers a consistent means for MORPC to evaluate funding proposals. Even after projects are funded, MORPC staff continues to assist with the projects. As noted in the *Complete Streets Policy* (MORPC 2010a, 2), "Because of the flexibility of the policy and variety of approaches that a sponsor may take to complete a street, MORPC staff, as stewards of the Complete Streets policy, will work with the project sponsor through the project development to find an acceptable solution for both parties."

Gay Street is a recent high-profile Complete Streets project in downtown Columbus.



Bicycle facilities integrated into Columbus' residential neighborhoods connect to trails and arterials.

Sample Questions from MORPC's *Complete Streets Checklist for Project Sponsors*

- Explain how the project area currently accommodates pedestrians (including ADA compliance) bicyclists, and transit users. Explain how the proposed project will accommodate them once completed.
- Please describe the existing character of the project area, including land use, estimated pedestrian and bicycle traffic, any unofficial walking paths, density of development, street furniture/lighting, emergency call boxes, perceived safety issues, transit routes and stops.
- To what extent does the project serve Environmental Justice target populations including minorities, people living in poverty, elderly, transportation handicapped, and 0-car households?
- Briefly explain how the project will improve safety.
- Please cite the specific design guidance or resources which relate to Complete Streets that you have used in developing the scope of your project.
- How will the project consider future utility/telecommunications needs?
- Please list the stakeholders who are involved during the early stages of the planning process.
- During construction, will safe access be maintained for all users, including pedestrians, bicyclists, transit users, and delivery vehicles?

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Complete Streets Case Studies

OVERVIEW

As part of the research report ***Complete Streets from Policy to Project: The Planning and Implementation of Complete Streets at Multiple Scales*** we developed this suite of case studies. Each case offers additional details on the community, key planning and policy documents, and the evolution of its complete streets program. They are organized so the first page provides a general case overview and key findings. The case reports highlight key findings and take aways from other jurisdictions, as well as details about local practices. The case include many images of complete street projects and document excerpts for further illustration.

CASE STUDY 1 **Albert Lea, Minnesota**

CASE STUDY 2 **Arlington County, Virginia**

CASE STUDY 3 **Boulder, Colorado**

CASE STUDY 4 **Charlotte, North Carolina**

CASE STUDY 5 **Columbus, Ohio**

CASE STUDY 6 **Dubuque, Iowa**

CASE STUDY 7 **Fargo-Moorhead, North Dakota / Minnesota**

CASE STUDY 8 **Hennepin County, Minnesota**

CASE STUDY 9 **Madison, Wisconsin**

CASE STUDY 10 **New Haven, Connecticut**

CASE STUDY 11 **Rochester, Minnesota**

CASE STUDY 1

Albert Lea, Minnesota

OVERVIEW

The City of Albert Lea offers an example of a city that is in an early phase of its complete streets movement. While the City does not have a formal city-wide complete streets policy, it does have an updated subdivision ordinance requiring subdivisions to "design with complete streets." The lack of a complete streets policy has not hindered the City from integrating multi-modal design elements into its projects, and planning its streets and infrastructure improvements in a more holistic way. Thanks to an innovative pilot project called the Blue Zones City Health Makeover, City staff, community leadership, and many residents see Albert Lea's streets as important places to encourage community connections and active living. This change in mindset has led to great community partnerships, education efforts, and important improvements to the City's streets.

1. New pedestrian scale lighting along Lakeview Boulevard.

2. Widened sidewalk and improved retaining wall along Lakeview Boulevard.

KEY FINDINGS

- Political leadership and support of a complete streets philosophy is essential to move from planning to implementation.
- The Blue Zones project was foundational in developing a complete streets subdivision ordinance, and improving planning and implementation efforts to encourage the development of a walkable community.
- The national publicity associated with the Blue Zones pilot project has helped maintain momentum around innovative efforts to encourage healthy living.
- Education and celebrations are a key part of the awareness strategy, building public understanding of complete streets and multi-modal safety.

CONTEXT

Albert Lea is a city of just over 18,000 (U.S. Census) located in the south-central region of Minnesota. Set amidst six lakes and 90 miles south of the Twin Cities, the City of Albert Lea spans just over 12 miles. The renowned Mayo Clinic has a regional hospital in Albert Lea and serves as an important employment center for the region. Roughly 22% of the population is 65 years of age or older, significantly higher than the total percent for Minnesota (12.9%). Just over 12 percent of the working population report walking, biking, or taking transit as their primary mode of commuting according to the American Community Survey (2011).

Community Stats

18,016 persons — population	**13** sq. miles — total area
12.4 percent — commute by bike, walk, transit	**49.9** inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

DOCUMENTS

Albert Lea Walkability Audit

Sponsored by the American Association of Retired Persons (AARP) Blue Zones City Health Makeover, the audit engaged an estimated 100 community members in conducting a walking audit and participating in focus groups to "improve the health, quality of life, longevity, economy and social connections of Albert Lea" (Burden, 4). The walking audit and document preparation was led by a national consultant, the Walkable and Livable Communities Institute. The document describes the project process, current street conditions of Albert Lea, and some examples of future desired conditions. Highly illustrated with photos of Albert Lea's existing conditions and images of exemplary walkable infrastructure from other communities, it provides examples that might be applied in Albert Lea.

Albert Lea Subdivision Ordinance

The City recently revised its subdivision ordinance, incorporating complete streets language and requiring new subdivisions to be designed with complete streets. The ordinance provides general guidance to consider complete streets to provide for all modes of transportation and encourage connectivity to destinations such as parks and public facilities. The ordinance articulates specific sidewalk width and setback minimums, though does not specify design guidance for other modes.

City of Albert Lea Subdivision Ordinance

All subdivisions shall be designed with complete streets. Complete streets means a system that provides for auto, truck, pedestrian and alternate vehicle travel including bicycles, scooters, wheelchairs, and similar transport devices. These system requirements will be determined based on the most appropriate facility. Shared user paths may be appropriate and on street dedicated bicycle lanes, may also be required. If there are sidewalks they shall be not less than five feet in width and setback off the curb not less than five feet. The system shall connect to adjoining subdivisions and to destinations such as parks, churches, schools, institutions, and other public facilities. Appropriate accessible facilities shall be placed at all intersections.

Code 1980, § 12.22; Ord. No. 124, 4d, § 1, 9-14-09

3. New wide sidewalks, period lighting, ADA compliant ramps, and unique concrete detailing on the Lakeview Boulevard bridge make it more pedestrian friendly.

PRACTICE

Efforts to address Albert Lea's streets began in earnest when Albert Lea was selected as a pilot city for the AARP Blue Zones Healthy City Makeover initiative. Funded by United Health Foundation, the pilot-program was, "designed to improve the health and projected life expectancy of people of all ages who live and work in the city. The goal is to add at least 10,000 years of projected life expectancy to the people of Albert Lea through environmental and individual changes" (Burden, 2). The Blue Zones project addressed many aspects of healthful living, one of which was focused on improving the public realm to encourage residents to be more active and more connected to the community as a whole.

City staff and community leaders point to the Blue Zones project and the walkability audit as central to identifying priority areas to improve Albert Lea's walkability and bikeability. Rather than yielding a prioritized list of projects, the audit process identified critical areas of focus, such as improving safety in school zones, connecting neighborhoods, and providing paths that allow residents to access lakes in the area. The audit allowed the City to be more systematic in its efforts to improve its non-motorized network. Since the walkability audit, the City of Albert Lea has added 22,000 feet of new sidewalks.

Another key outcome of the Blue Zones project was the development of the National Vitality Center. The National Vitality Center was created through partnerships with the goal of continuing the momentum of the Blue Zones project. It is composed of local leadership with representatives from the City, Freeborn County, education, and the health and business sectors (see information below). The National Vitality Center's focus is on "broad-based community wide strategies that make the healthy choice the easy choice, and encouraging connectedness in all sectors of our community" (National Vitality Center, 2012). Through public service announcements on television and radio, newspaper articles, community events, and personal conversations, the members of this group work to educate everyone from residents to elected officials on a myriad of topics such as bicycle and vehicular safety, importance of complete streets, healthy food choices, and worksite wellness programs. Community events like the annual Bike Rodeo are important events, bringing people together to increase understanding of bike safety and increase visibility to how the City of Albert Lea works to improve its streets and infrastructure.

Mission:
To establish and encourage an ongoing community focus and commitment to individual wellness and personal well-being.

Vision:
To create permanent systematic environmental and policy changes that lead to a healthier environment: creating opportunities for physical activity and healthy eating by positivity encompassing an individual's community, habitat and purpose.

National Vitality Center Board of Directors
Mayo Clinic Health System, Freeborn County Public Health, City of Albert Lea, Albert Lea School District, United Way of Freeborn County, Albert Lea Family Y, Albert Lea/Freeborn County Chamber of Commerce, Albert Lea Convention and Visitor's Bureau, Freeborn County Historical Society, Freeborn County Family Services Collaborative, and Senior Services.

"Start with projects you know will be successful and visible. If you have some success stories, you can easily move on from there."

4. An on-street bike lane and lighted pedestrian crossing provides access to a large employment center on a busy arterial street in Albert Lea.

"Complete streets is looked at in every CIP project and we document why or why not complete streets has been incorporated into the project."

In addition to analysis, promotion, and community engagement, the City of Albert Lea has also started the process of addressing policy. While it does not have a complete streets policy, the City amended its subdivision ordinance in 2009. This amendment was adopted unanimously by the City Council and is intended to guide future development in Albert Lea.

In terms of complete streets implementation in the developed area of Albert Lea, the City's planning and engineering departments collaborate in evaluating projects listed on the Capital Improvement Plan (CIP) and to figure out how complete streets design elements can be integrated into projects. Front Street, an east-west connector in Albert Lea, is the first street to include bike lanes in the City. The street was scheduled for restriping, leading the City Council and staff to consider whether the street was a good candidate for bike infrastructure. Front Street is an important east-west corridor with a wide right of way and is flanked by a variety of land uses including schools, senior living complexes, and employment centers. Its importance in the transportation system made Front Street a perfect candidate to incorporate new street designs including wider sidewalks, and reduced parking to provide for an on-street bike lane. There was some opposition to the new alignment, but according to City staff and community leaders, the implementation has been a huge success and has encouraged support from those who originally opposed the project. The street is calmer, freight traffic now follows the intended truck route through town and no longer uses Front Street as a short cut. The Front Street project was advanced with funding from a local hospital for the initial re-striping and striping maintenance for the first five years. This funding partnership ensures short term maintenance and offers the City additional time to secure long term funding.

For a project that is currently in the design development stage, Broadway Avenue, the City is employing new tactics to educate the public and garner support. Project fact sheets and newsletters developed by the project consultant illustrate how some complete streets design elements can be

5. This section of Front Street transects a busy light industrial area where in some cases parking lots are on one side of the street, and employment centers on the other. The City added signage, new striping, a bike lane, and a lighted crosswalk in effort to slow traffic and make it safer for all modes.

safer for all modes and provide a substantial cost savings (see below). The project scope fact sheet communicates important overall project details such as necessary utility improvements and a cost comparison of traditional intersections as opposed to the proposed bump-out intersection. Newsletters allow the city and project consultant to inform residents on project issues in a timely manner and communicate a variety of information, such as the project timeline, funding sources, design modifications based on public feedback, and other project details. The City also tested sidewalk bump-outs and stop signs using cones to reflect planned changes, another new tactic to educate the public and assess how pedestrians and vehicles navigated the potential changes. Initially pedestrians were confused and walked around the cones, but as the City shared more information about how to navigate the experiment the planned improvements were determined to be positive for pedestrians, did not impede large vehicles when turning, and improved traffic flow in the area.

While Albert Lea's implementation of complete streets is just beginning, the City has set the stage for success because of its commitment to educating the community on the benefits of complete streets and strategically implementing highly visible, successful projects.

> ***"Public engagement is important, and it is essential to start at the beginning of the process."***

PROJECT SCOPE
ESTIMATED COST INFORMATION
BROADWAY AVENUE INFRASTRUCTURE AND STREETSCAPE PROJECT
SEPTEMBER 10, 2012

EXISTING INFRASTRUCTURE

- The existing sanitary sewer, watermain, and storm sewer systems in Broadway Avenue are over 80 years old and are in need of replacement
- The existing street consists of concrete pavement that was originally constructed in 1933 and was overlaid with blacktop in 1956, 1975, and 2002
- The sidewalks and curb between Main Street and Clark Street were removed and replaced in 1976. The existing tree "bunkers", decorative walk, and decorative lighting were also added at that time
- The existing sidewalk and curb between Fountain Street and Clark Street were reconstructed in 1991, but no streetscaping amenities were included in that project
- While the existing street surface is in fair condition, the replacement of the sanitary sewer, watermain, and storm sewer systems will require the removal of the street and sidewalk throughout most of the area
- **The existing underground utility and street infrastructure needs to be replaced regardless of whether or not streetscaping elements are included in the project**

BUMP-OUTS COST LESS

- Sidewalk in bump-out areas cost less than street pavement that would be required with no bump-outs:
  - Trading street pavement for sidewalk results in a slight decrease in cost per intersection with bump-outs vs. no bump-outs – approximately $3,000/intersection
  - Bump-outs reduce cost by an additional $3,000/intersection by reducing the crosswalk decorative paver length
- Replacement of the existing traffic signals if bump-outs are not provided would cost between $175,000 and $200,000 per signal system
- **Bump-outs save $360,000 to $420,000 in total project costs!**

Note: See the separate "Bump-Out Information" fact sheet for more information regarding bump-outs

PROJECT COSTS

The following is a breakdown of the preliminary project costs based on the design concepts developed to date

INFRASTRUCTURE ELEMENT	ESTIMATED COST
Basic Street and Surface	$1,771,300
Basic Street Lights	$238,100
Sanitary Sewer, Watermain, & Storm Sewer	$846,800
Subtotal, Basic Infrastructure Improvement Project	$2,856,200
Broadway Avenue Streetscaping (additional cost from basic street and surface improvements)	$363,800
Broadway Avenue Decorative Street Lights (additional cost from basic street lights)	$154,700
Subtotal, Additional Streetscaping Costs	$518,500
William Street Pedestrian Plaza	$190,500
Water Street Pedestrian Plaza	$161,700
Fountain Park Improvements	$349,700
Subtotal, Pedestrian Plazas and Park Improvements	$701,900
Total	**$4,076,600**

Note: Estimated costs include engineering/architectural fees, administrative costs, and financing costs

UNIQUE OPPORTUNITIES

- **The fact that the existing street and sidewalks will be removed for the utility reconstruction creates a "once in a lifetime" opportunity to consider additional aesthetic amenities that may be a catalyst to help re-vitalize the downtown area**
- **The project will include treatment for stormwater runoff before it is discharged into Fountain Lake**

City of Albert Lea
Broadway Avenue Infrastructure & Streetscape Project

The City of Albert Lea

BROADWAY AVENUE INFRASTRUCTURE AND STREETSCAPE PROJECT

NOVEMBER 2012 — VOLUME 1, NUMBER 5

BROADWAY AVENUE INFRASTRUCTURE AND STREETSCAPE TIMELINE

November 2012 to February 2013
- Final Design Phase

February 2013 to March 2013
- Bidding and Award Contract

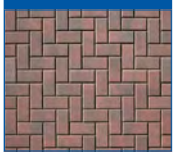
April/May 2013
- Start Construction Phase 1

October/November 2013
- Complete Construction Phase 1

Sidewalk View

Phase 1

Complete reconstruction of the Broadway Avenue including, sanitary sewers, watermains, and storm sewers as well as streetscape amenities from Main Street to Fountain Street. The first phase also includes pedestrian plazas and improvements to Fountain Lake Park.



Herringbone Pattern - Paver Color

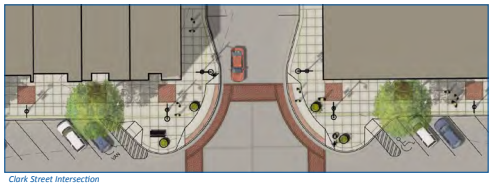
DESIGNS TO BE PRESENTED NOVEMBER 19TH

The design team has continued forward with refinements for final design based on input from public meetings, Streetscape Design Steering Committee, City Staff, and City Council. To date, street widths and sidewalk widths, decorative sidewalk treatments, layout of street lights, trees, planters and other streetscape amenities for the project corridor from Main Street to Fountain have, for the most part, been finalized. **The proposed design will be presented at a Public Informational Meeting to be held from 5:30 pm to 7:00 pm on Monday, November 19 in the City Council Chambers at City Hall.**

A few key design points are:

- At each intersection there will be a dropped curb to the extent practical with tactile warning panels along the length of the dropped sections.
- In order to facilitate snow removal, the reverse curves on Clark Street and Water Street have been reduced as much as possible without losing existing parking.
- Existing signal systems at Clark Street and William Street will be removed and replaced with four-way stops.

Block Rendering of Broadway Avenue from William Street to Clark Street



Clark Street Intersection

Decorative Sidewalk

- The new sidewalk will be concrete with mitered joints and concrete pavers placed rhythmically to provide an aesthetic enhancement.
- Concrete pavers will be used for crosswalks at each intersection to create a well-defined pedestrian crossing area.
- Pavers will have a concrete subbase that is tied into the adjacent concrete sidewalk or pavement to prevent settling and to maintain a consistent elevation with the surrounding areas.
- Each paver is 4" x 8" and laid in a herringbone pattern to produce a very secure interlocking network. The color will be a blended mix of red and grey.

Broadway Avenue project fact sheet and newsletter examples (source: City of Albert Lea).

ADDITIONAL PROJECT PHOTOS

6. An improved intersection along West Lakeshore Avenue with wider curb cuts, ADA compliant ramps, and a sidewalk that allows residents to walk along the lake shore. The sidewalk connects to the Fountain Lake Trail an important multi-use trail that allows pedestrians and cyclist to remain along the lake shore instead of navigating city streets and provides access to Brookside Park.

7. New bike lanes along Front Street. The bike lanes were made possible, in part, by funding from a local hospital for the initial re-striping and striping maintenance for the first five years.

8. New bike signage along Lakeview Boulevard where bikes and vehicular traffic share the road.

RESOURCES

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Project sponsors

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Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

9-10. Fountain Lake Trail provides access to parks and Fountain Lake. The trail also adds an important non-motorized option to the network of ways to access downtown Albert Lea.

11. The City's first bike lanes were implemented on Front Street, a major arterial that transects many different conditions in Albert Lea. In this section in front of an elementary school, parking was removed on the side of the street across from the school to allow for wide bike lanes and the school zone is marked to increase safety for students.

CASE STUDY 2

Arlington County, Virginia

OVERVIEW

Arlington County, Virginia, has long been recognized as an innovator in transportation and has pursued a multi-modal transportation approach for several decades. The County is explicit in emphasizing connections between transportation and land use, promoting transit-oriented development (TOD) and Smart Growth. Complete streets is clearly emphasized in the County's current transportation plan, but the term simply renames the County's long-time efforts to advance multi-modal outcomes that include rail and bus transit, as well as bicycle and pedestrian facilities. Arlington County has placed a significant emphasis on public engagement through its extensive array of advisory committees, many of which relate to transportation and have the potential to influence both transportation plans and projects. The County allocates significant resources toward data collection and education/outreach. Transportation data collection and analysis offers critical evidence for plan revisions and decision making. Education and outreach efforts target residents, employers, and other key stakeholders with the intent of fostering awareness of transportation options and promoting safety.

KEY FINDINGS

- Arlington County's organizational structure, planning efforts, and transportation and development projects clearly emphasize the connection between transportation and land use.
- Integrating complete streets into the over-arching *Master Transportation Plan* and its various elements is important to elevating it as a priority and ensuring ongoing consideration.
- Investing in transportation data collection and analysis offers important feedback for planning, decision making, and promotion.
- Meaningful public engagement through established advisory committees can offer valuable expertise and garner critical support for transportation and development planning decisions.
- The private development and redevelopment process offers an important opportunity to pursue infrastructure, streetscape, and other improvements to advance complete streets.
- Public outreach and education related to multi-modal transportation options can be tailored to reach residents, employers, and other audiences and can significantly reduce automobile trips.

1-2. The Rosslyn Metro Station area has high traffic levels, with automobiles, buses, and freight and service vehicles. In addition, the area supports pedestrian traffic with wide sidewalks, well-marked crosswalks, and signals.

Community Stats

207,627 persons — population	26 sq. miles — total area
33.9 percent — commute by bike, walk, transit	22.0 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

CONTEXT

Arlington County is located in the Washington, D.C., metropolitan area. It is fully developed, but is experiencing significant redevelopment, particularly along its transit corridors. It is home to two Washington Metropolitan Area Transit Authority (Metro) rail lines, including the orange line in the Rosslyn-Ballston corridor that has received significant attention for its transportation oriented development (TOD). The County is 26 square miles in size and has a 2010 population of 207,000 (U.S. Census). Portions of the County closest to Washington, D.C., have high densities with a mix of uses, including office, multi-family residential, institutional, and retail. Residential areas include traditional single-family neighborhoods, large condominium and apartment towers, as well as suburban-style newer neighborhoods. Relative to the state of Virginia and the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Statistical Area (MSA), Arlington County has a higher household income and a higher proportion of multi-family housing units. Residents of Arlington County also have a relatively lower use of automobiles for travel to work. Arlington County has been recognized for its leadership on TOD and multi-modal transportation. The County has many on-street and off-street bicycle and pedestrian facilities, and also participates in the Capital Bikeshare program that serves the Washington, D.C. area. In addition to rail transit, there is an extensive bus transit system, and the County is planning streetcar implementation along two corridors.

DOCUMENTS

Master Transportation Plan

The *Master Transportation Plan (MTP)* serves as the overall guiding document for transportation in Arlington County and is adopted as an element of the County's Comprehensive Plan. The current *MTP* was approved by the County Board in 2006 and addresses all aspects of transportation (streets, transit, pedestrians, bicycles, parking and curb space management, transportation demand and system management). The *Plan* consists of an overarching set of goals and policies and a map of facilities associated with each of the modes. The goals offer broad direction (e.g., providing high-quality transportation services, moving more people without more traffic), but include specific associated strategies. In addition, the *MTP* includes general and mode-specific policies. Among these policies is one focused on complete streets – "Support the Design and Operation of Complete Streets." See text box at right for the detailed language associated with this policy. Each of the modes noted above is addressed in a specific element of the *MTP*, though some were adopted after the initial Goals and Policies section was approved in 2007. For example, the Streets Element was adopted in 2011 and is specific in its attention to complete streets with a specific objective

Excerpt from Arlington County Master Transportation Plan

General Policy B. Support the Design and Operation of Complete Streets:

Design and operate a comprehensive network of Arlington's local and arterial streets to enable safe access by all user groups including pedestrians, bicyclists, transit vehicles and users, and motorists of all ages and abilities, allowing these users to access a full range of daily activities.

Arlington will work to transform its current roadway network into "Complete Streets." Complete streets provide appropriate facilities to accommodate all expected transportation users and also take into account the scale and character of the streets' setting. Transportation performance measurement will shift from an emphasis on the traditional vehicle "Level of Service" to an emphasis on multimodal "Quality of Service."

Source: Arlington County 2007, p. 5)

to pursue "complete streets that accommodate all users and encourage alternatives to driving." The Streets Element also introduces a new street typology (see text box below) that builds on traditional functional classifications to "enable the County, its residents, and its businesses to understand streets in terms of their land use and multi-modal function, not just their vehicle function." The pedestrian, bicycle, and transit elements also address multi-modal considerations. The planning process for the *MTP* and associated elements incorporated input from the wide range of citizen advisory groups (e.g., Bicycle Advisory Committee, Transit Advisory Committee), with leadership from the Transportation Commission.

> ***"It's about the fundamental American value of choice."***

Excerpt from Streets Elements of the *Master Transportation Plan* outlines Arlington County's new street typology specifies transportation function, but places significant emphasis on context. The typology includes an associated table that specifies typical approaches for transit service, bicycle facilities, medians, travel lanes, street parking, and other design factors. The typology addresses arterial and local streets, one example of each is provided below:

Arterial Street Example
Primarily Retail Oriented Mixed Use. An arterial street segment that serves (or is planned to serve) a dense commercial area and is fronted by (or planned to be fronted by) predominantly high-intensity, ground-level retail and consumer service. It is highly oriented to pedestrian, bicycle, and transit access with wide sidewalks, bike lanes, and transit stops prioritized over motor vehicles' travel space and parking. (Arlington County 2007, p. 24)

Local Street Examples
Neighborhood Minor Streets: Neighborhood minor streets occur in low- and medium-density residential areas. These streets are very similar to neighborhood principal streets in form and function. The distinctive feature of these streets is their nearly exclusive orientation to providing access to residences. Because residential streets typically have low traffic volumes with infrequent travel by large vehicles, all users (other than pedestrians) can be accommodated within a relatively narrow travelway. On-street parking should usually be provided, and sidewalks should be provided along at least one side although preferred for both sides. *(Additional descriptive details are provided relative to street widths, sidewalks, parking, landscaping, lighting, and modal priority.)* (Arlington County 2007, p. 28)

PRACTICE

Arlington County's practice in complete streets emerged over time from a long history of innovative transportation planning, with a strong focus on building a rail and bus transit system and fostering development and redevelopment around that system. The *Master Transportation Plan (MTP)* serves as the primary guiding document for transportation planning in the County and is consistently used by staff and elected officials. The *MTP* provides details related to transportation, but also makes a strong connection to the land use context. The Division of Transportation and Development, which prepares the *MTP*, also acknowledges this connection on its website, noting that "transportation issues are at the forefront of the "smart growth" principles to which the County is committed." Land use and transportation connections are also addressed in the County's sector plans, which over time have engaged neighborhoods in planning for development and redevelopment at the area scale, including around Metro station areas.

> ***"[Complete streets] starts with a vision that has to be shaped from the very top down"***
>
> ***--***
>
> ***"It has to be a mentality that everyone accepts, embraces, and attempts to implement"***

The County does not have a complete streets policy or any documents specifically focused on complete streets. Rather, the *MTP* and associated elements refer to complete streets as part of an overall transportation system and program that places a strong emphasis on accessibility and context. The County began using the complete streets term as it became recognized nationally, but the intent of complete streets has been apparent in the County's efforts for many years. As staff noted, the *MTP* "is a great place to explain what we've been doing all along and now have a name for." Staff also note that complete streets is built into almost every one of the County's transportation projects, public and private. Staff from across the County's divisions work closely

"[You] can't always incorporate every use into every street -- that's not what we mean by complete streets"

together, with many meetings that engage diverse staff in site plan review, project development and review, and planning.

Staff and elected officials also work closely with an extensive series of advisory committees. Arlington County has institutionalized public engagement through its dozens of standing advisory committees, as well as engagement with over 50 civic organizations. Standing committees related to transportation include overarching Transportation and Planning Commissions, as well as modal committees including the Transit Committee, Bicycle Advisory Committee, and Pedestrian Committee. Additional committees address the key interest groups and issues such as disability, aging, neighborhood traffic calming, energy, urban forestry, and neighborhood conservation. The high level of engagement on the front end through these committees can address opposition at the outset and allows the County to move forward following work with relevant committees. As one staff member noted, "people feel they have an avenue to influence public decisions." Each of the committees noted above plays at least some role in the development and review of the *MTP*. In addition to the extensive committee structure, the County uses a wide range of other engagement techniques including surveys, online tools, and community meetings. In general, public support for the complete streets approach is high, but when opposition emerges relative to specific projects, staff engage further with residents by doing additional studies to assess traffic counts or speeds.

3-5. Walter Reed Drive north of Columbia Pike, near an elementary school, multi-family residential, and public service buildings incorporates bicycle lanes and enhanced crossings on a busy auto-oriented street.

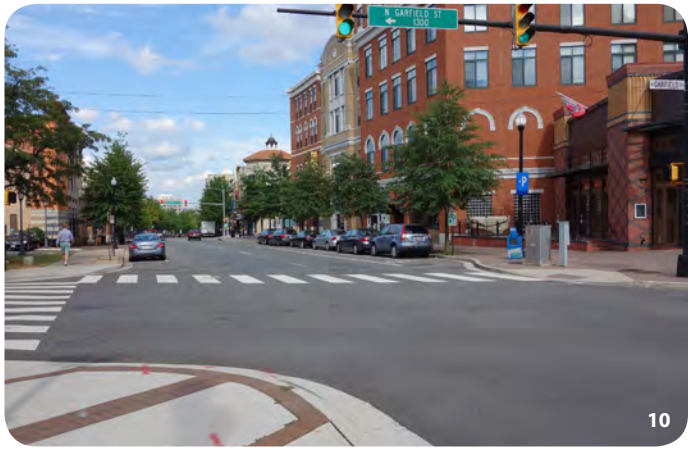
In addition to project-specific studies, the County maintains an extensive transportation research program that supports data collection and analysis. The research and evaluation informs plan updates and project decision making. Key data include but are not limited to travel associated with land use types, traffic counts, bicycle/pedestrian counts, and high accident areas. Arlington County's Commuter Services agency, which addresses transportation demand management (TDM) for the County, also collects data related to commuting patterns, outreach and engagement efforts, and employer efforts. Arlington County Commuter Services reports annually on its performance and has estimated a shift of over 40,000 automobile trips to other modes (2012b, p.6). The County invests significantly in efforts to educate residents, employers, building managers, businesses, and others regarding transportation options, including bus, rail, biking, walking, and telework. Efforts include a "Car-Free Diet," which encourages residents to find one trip that they can take without a car – such as going to work or to the store. The County has developed a promotional video, a logo, an advertising campaign, a website, and other accessible and resident-oriented resources. Other promotion and outreach efforts include publishing a County bicycle map, a bicycling website (BikeArlington.com), social media sites, events (e.g., Two Wheel Tuesdays), bicycle safety classes, partnerships with bicycle shops, and a wide range of other efforts.

Logos from Arlington County Commuter Services Car-Free Diet Campaign calls upon residents to identify just one trip that they can shift from a car to another mode.

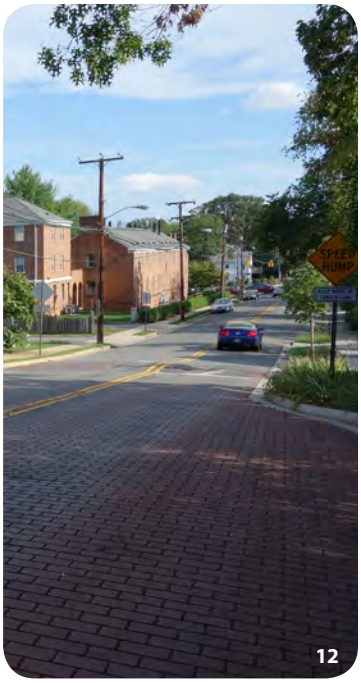
Relative to complete streets projects, the County has an extensive system of facilities for a variety of modes. The County has invested significantly in providing multi-modal facilities, including providing dedicated funding for bicycle and pedestrian facilities in the Capital Improvements Plan (CIP). Key sources of funding include a state-approved commercial real estate tax. Much of Arlington County's commercial development is in its transit corridors and these funds can be used for transit capital investment for improvements in these corridors. The County also raises local funds through a tax on vehicle registrations that supports neighborhood complete streets projects, electronic bicycle/pedestrian counts, bicycle/pedestrian wayfinding, bike share in neighborhoods, and other efforts. Finally, redevelopment activity in the County's transit corridors, including the two highly-developed Metro rail corridors, facilitates private sector provision of multi-modal infrastructure and enhancements. The County requires that developers rebuild the right-of-way to complete streets standards. State and regional funds have also been used to support some projects. The County has jurisdiction over nearly all of its roadways and thus there is little need for coordination with the Virginia DOT. In a few instances, there have been struggles and for one project, the County permanently took over jurisdiction of the roadway from the state.

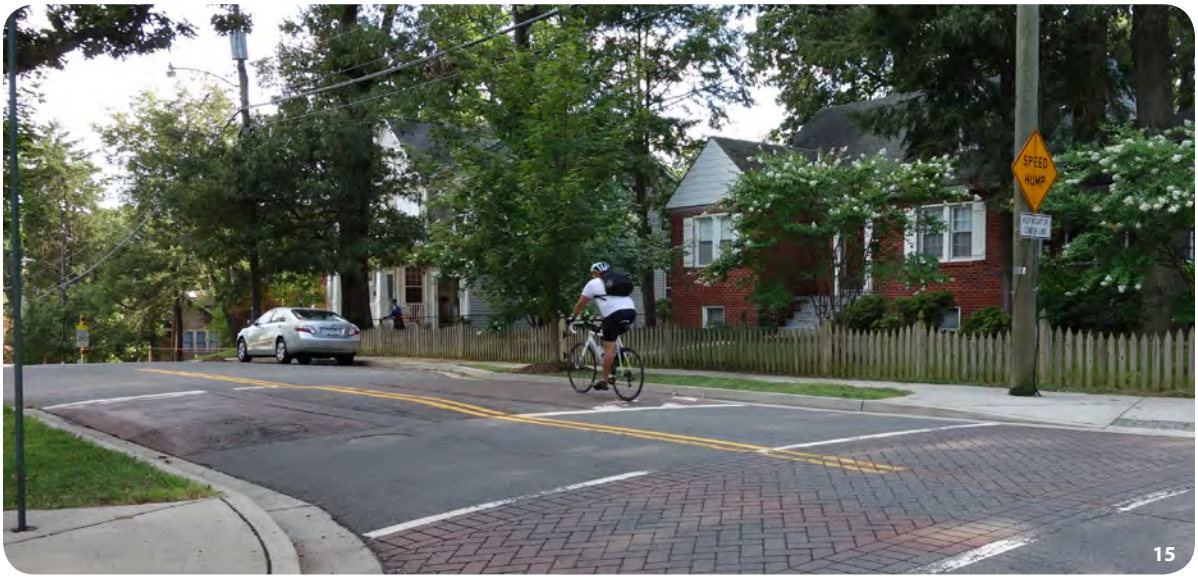
> ***"As you start to change the fabric of the transportation network, it encourages people who want a different lifestyle who choose to live there."***

ADDITIONAL PROJECT PHOTOS



6-10. Wilson Boulevard near the Clarendon Metro Station offers safe access for bicyclists and pedestrians among nearby office, retail, and multi-family residential, and transit facilities.





11-15. Fillmore Street south of 7th Street features a number of traffic calming enhancements intended to create a more pedestrian friendly environment in a largely single family residential neighborhood with a park and school.

ADDITIONAL PROJECT PHOTOS

16

17


18

16-18. Fairfax Drive near the Ballston Metro Station includes large office, multi-family residential, and commercial structures, and also incorporates significant transit, bicycle, bike share, and pedestrian facilities.

RESOURCES

Arlington County. 2007. **Master Transportation Plan.** http://www.arlingtonva.us/departments/environmentalservices/dot/planning/mplan/mtp/mtp_draft.aspx. Accessed April 2, 2013.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

19-20. Signage near the Key Bridge and Rossyln Metro Station offers directions for automobiles, pedestrians, and bicyclists, including connections to regional off-street trails.

CASE STUDY 3

Boulder, Colorado

OVERVIEW

The City of Boulder, Colorado, has pursued a transportation planning approach that can be considered complete streets for over 20 years. Since its first *Transportation Master Plan* in 1989, which emphasized a modal shift from automobiles to other modes, the City has continued to advance a system-scale planning for multiple modes under the moniker of "GO Boulder." In the last approximately five years, Boulder began to formally use complete streets to characterize its work on multi-modal corridors. Boulder strongly emphasizes a network approach, building connections across the community and across modes. Boulder has invested local funding into scores of off-street and on-street bicycle and pedestrian facilities, transit vehicles and associated infrastructure, and a strong local bicycling, walking, and transit promotion program. The City, with its strong base of ongoing transportation planning and clear set of project priorities, is very competitive in acquiring federal transportation funding for key projects.

KEY FINDINGS

- The City's decision to limit growth of vehicle miles traveled (VMT) to the 1994 level, represents a significant reorientation of the City toward multi-modal planning.
- A network focus in local transportation planning helps identify priority modal and multi-modal corridors and connections needed to build out a system for all users.
- Local investment in bicycle, pedestrian, and transit facilities can accomplish priority projects, and also allows the community to leverage local funds to secure federal transportation dollars.
- Strong local political support and a consistent staff are critical to achieving innovation and a long-term view.
- Following a long history of success in multi-modal transportation planning, the City recently began utilizing the complete streets term to be consistent with other communities.
- Local transportation data collection and reporting offers critical evidence for evaluation and support for plans, policies, and investments.

1-2. 28th Street Frontage Road includes sharrows, wide sidewalks with landscape buffers, crosswalks, and a tunnel under the Denver-Boulder Turnpike connecting hotels and apartments to the University of Colorado Boulder.

Community Stats

97,385 persons — population	27 sq. miles — total area
28.0 percent — commute by bike, walk, transit	60.0 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

City of Boulder 2008 Transportation Master Plan Goals and Objectives

2025 Goals:

- An integrated, multimodal transportation system emphasizing the role of the pedestrian mode as the primary mode of travel;
- A transportation system supportive of community goals;
- Sufficient, timely and equitable financing mechanisms for transportation;
- Public participation and regional coordination in transportation planning; and
- A transportation system supportive of desired land use patterns and functional, attractive urban design.

2025 Objectives:

- Continued progress toward no growth in long-term vehicle traffic;
- Reduce single-occupant-vehicle travel to 25 percent of trips;
- Continued reduction in mobile source emissions of air pollutants;
- No more than 20 percent of roadways congested (at Level of Service [LOS] F);
- Expand fiscally viable transportation alternatives for all Boulder residents and employees, including the elderly and those with disabilities; and
- Increase transportation alternatives commensurate with the rate of employee growth.

source: City of Boulder 2008

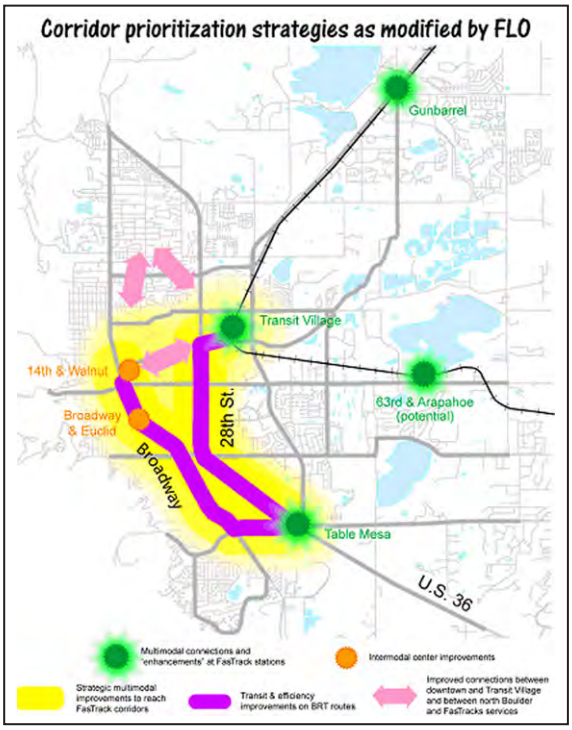
CONTEXT

Boulder, with its 2010 population of just under 98,000 is located in the northwestern part of the larger 2.59 million person Denver region (U.S. Census). The City of Boulder is home to the University of Colorado Boulder, which enrolls nearly 30,000 students and employs 6,800 workers (University of Colorado). The development pattern is relatively compact, with a traditional downtown and older neighborhoods on the east side of the community closer to the iconic Flatiron rock formations at the foothills of the Rocky Mountains. Lower densities and a more suburban development pattern are found on the west side adjacent to Denver suburbs. Boulder and Boulder County are innovators in open space protection and have advanced an open space protection policy and local tax levy to generate funds for purchasing open space and farmland at the edge of the city. Following over 20 years of work on building a multi-modal transportation system, Boulder has an extensive system of bicycle and pedestrian facilities located both on-street and off-street throughout the City, including an extensive greenway system. Boulder's Community Transit Network, includes local routes with named and colorful buses, owned and operated by the Regional Transportation District (RTD), which covers the entire Denver region. Boulder is planned to be connected to RTD's FasTracks light rail and commuter system, currently under construction. The City recently established a bike sharing system called Boulder B-cycle and frequently receives awards related to its transportation system, including a 2012 Platinum Bicycle Friendly Community designation from the League of American Bicyclists.

DOCUMENTS

Transportation Master Plan

First approved in 1989, the *Transportation Master Plan (TMP)* is the primary guiding document that identifies funding priorities and critical projects and programs. The *Plan* was updated in 1993, 2003, and 2008, with an additional update planned for 2013 and a planning horizon of 2035. The updates are described as "incremental," with an intent to develop a "living plan" that is responsive to changing funding levels, growth patterns, planning efforts, and feedback from evaluation efforts. The current *TMP* notes its intent as reconciling "two seemingly conflict goals: first to provide mobility and access in the Boulder Valley in a way that is safe and convenient; and second, to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise." The latter portion of this statement clearly emphasizes the strong focus on alternative modes. The *Plan* includes goals and measurable objectives (see text box at left) and



Map from 2008 Transportation Master Plan shows priorities in Complete Streets Investment Package focused on better integrating transit and other modes.

an investment program that clearly prioritizes operations, maintenance, and safety, followed by improvements for the transit, pedestrian, and bicycle system. Auto capacity additions (e.g., new lanes, interchanges) are explicitly designated as the lowest priority. One aspect of the investment program is the complete streets investment package, which was developed based on collaboration with RTD's FasTracks Local Optimization (FLO) process. Investments in this package strongly support operation and maintenance, as well as enhancements for better access to transit facilities and coordination of transit and other modes. Critical priorities addressed throughout the *TMP* as policy focus areas include: (1) multi-modal corridors, (2) regional travel, (3) transportation demand management, and (4) funding. These focus areas are represented in approaches and priorities outlined in the TMP for four modal plans on automobile, transit, bicycle, and pedestrian travel. The *Plan* concludes with a brief summaries of performance measures (e.g., alternative modes as percent of total trips, air quality), and next steps for implementation.

Transportation to Sustain a Community: A Report on Progress

Most recently published in early 2012, this document summarizes the evolution of the *Transportation Master Plan* since 1989, highlighting key changes, and presenting data to track progress. The *Transportation to Sustain a Community Report* is produced based on the City of Boulder's own data collection and metrics program, including a travel survey, and data from external sources such as the U.S. Census. The document is publicly available and attractively designed, with large photos, quotes, simple infographics, and accessible summary text. Graphs highlight key data and compare data to *TMP* goals, where appropriate. Trends are illustrated, with many graphs highlighting changes over the past 20 years.

3. B-cycle bike share system features stations throughout the city, including here near city government buildings and the Boulder Creek Greenway.

PRACTICE

Boulder is a community that has institutionalized a multi-modal transportation focus through a continually evolving approach to transportation planning. The *Transportation Master Plan (TMP)* is the critical guiding document, with updates since the first plan in 1989 reflecting an evolving practice that continues to prioritize transit, bicycles, and pedestrians. This approach, which has spanned more than 20 years, has recently adopted the term complete streets as part of its practice, though the broader focus remains on the transportation network, with complete streets particularly influential in highlighting opportunities to better connect transit with other modes as part of what one staff person calls a "seamless network." The recent integration of complete

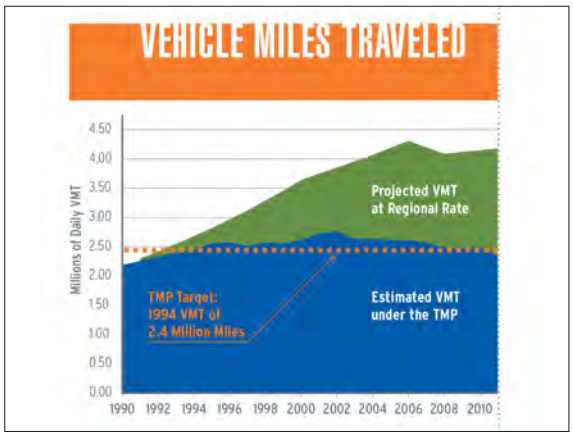
> ***"Nothing they've done has been revolutionary, but it has been evolutionary."***

4-5. Canyon Boulevard near downtown and city government buildings features landscaped medians and mid-block priority crossing for bicycles and pedestrians. The Boulder Creek Greenway runs adjacent to this roadway and is connected at numerous points.

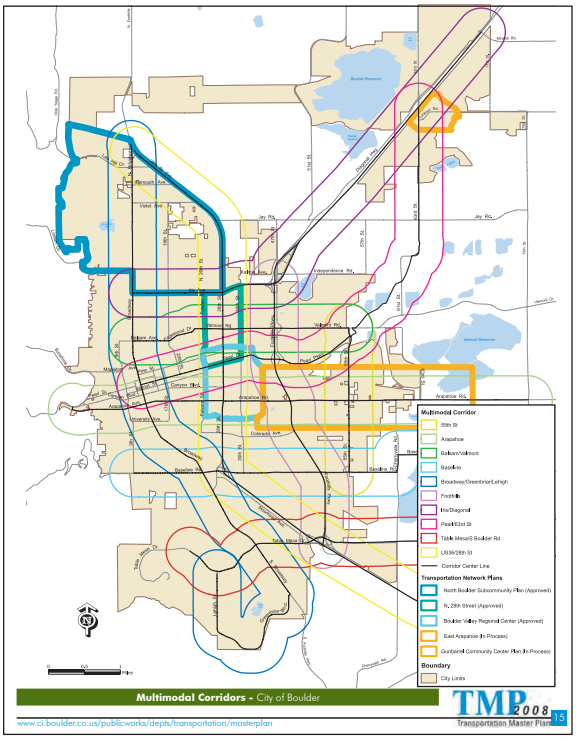
> ***"It's an internal culture change, you can't write a memo and say this is what we are going to do."***

streets into plan updates is also informed by broader national focus on the term.

The initial 1989 *TMP* was a critical starting point in Boulder's approach to transportation planning. In response to increasing traffic congestion and projected population growth, the community identified two possible approaches, one focused on widening roads and the other focused on accessibility. The community with leadership through the City Council and staff, considered costs, character, and quality of life impacts of the two options and ultimately settled on prioritizing a shift away from single occupant vehicle trips. The 1996 *TMP* continued to evolve the City's approach, with the critical decision to adopt a goal of maintaining vehicle miles traveled (VMT) at 1994 levels. The City's priorities and investments shifted to accommodate a broader view of how steady or declining VMT might be achieved through a focus on other modes. The graph "Vehicle Miles Traveled" to the right shows long-term performance relative to the City's VMT goal. The 1996 *Plan* also identified a number of major corridors to enhance for buses, bikes, pedestrians, and automobiles, and added plans for each of these modes.



The Transportation to Sustain a Community report provides data reports on a number of key measures, including Boulder's goal of maintaining VMT at 1994 levels. The graph above suggests that the City is meeting its goal, with VMT rates significantly below regional levels.



2008 Transportation Master Plan identifies Multimodal Corridors and Transportation Network Plan areas to facilitate more focused corridor- and area-specific planning for multiple modes and land use.

The next two plans in 2003 and 2008 more fully developed the concepts of multi-modal corridors, complete streets, and a transportation network. Through policy focus areas and targeted investment strategies, the plans further refined a decision-making and prioritization framework for the community. In the 2008 *Plan*, the discussion of "Multimodal Corridors" as a policy focus area highlights the need for improvements that address the roadway, pedestrians, bicycles, and transit (see image at right) and also acknowledges the connection to land use. "Transportation Network Plans" are also discussed in these two most recent plans. As described in the 2008 *TMP*, Transportation Network Plans function as area plans that advance "'multimodal' integration at a finer grain," as well as integration between land use and transportation planning. The two most recent plans are offered as web-based documents for easy

What Are the Multimodal Corridors and What Improvements Are Proposed?

The 1996 TMP identified 10 multimodal corridors and called for improving all modes of travel along them. As these corridors carry a majority of the trips in the community and link important activity and commercial centers, maximizing their efficient trip carrying ability requires improving the relationship between the multimodal transportation system, land use and design along these corridors. The 10 corridors' improvements include:

Roadway

- Roadway reconstruction to reduce long term maintenance liabilities;
- Improved operational and traffic flow through intersection enhancements focusing on system "bottlenecks";
- Roadway improvements which support multi-occupant vehicle use;
- Roadway related (functional efficiency/safety) improvements in priority corridors; and
- Signal coordination optimization based on current traffic flow patterns.

Pedestrian

- Complete segments of missing sidewalks to provide direct and continuous connections between destinations and to transit;
- Continue adding enhanced pedestrian crossings at strategic locations; and
- Continue installation of pedestrian signals and crossing count-down heads.

Bicycle

- Complete missing bicycle trails and bicycle lanes to provide direct and continuous connections;
- Construct needed underpasses at high volume locations to provide safe connections; and
- Provide effective bicycle route signage.

Transit

- Deploy the high frequency CTN;
- Construct enhancements at key high frequency transit stops to include, at a minimum, transit signs and pavement platforms. At higher demand transit stops, shelters, benches and trash receptacles will be provided; and
- Operational system efficiency improvements, such as bus bypass lanes, bus signal prioritization and other improvements to increase the efficiency of the CTN.

2008 Transportation Master Plan describes priority improvements across multiple modes in designated multimodal corridors. These streets carry a high amount of automobile traffic, but also serve as critical corridors for other modes as they abut and connect major institutions and commercial and employment areas.

access by community members and stakeholders.

The *TMP* updates are developed by Boulder's Transportation Division, with input from the City Council and a Transportation Advisory Board, a five member body appointed by the City Council. The *TMP* is part of Boulder's broader transportation program called GO Boulder. This name emerged following the adoption of the first *TMP* in 1989, with the initial intent to represent the Transportation Division's work on "alternative transportation." GO Boulder then evolved to represent the work of the entire Division as the multi-modal transportation focus became institutionalized. GO Boulder has emerged as a brand as it has been used in marketing and promotion efforts related to advancing transit, bicycling, and walking in the city. Eco Pass, an annual transit pass purchased by employers for their employees is an important factor in promoting transit. Eco Pass is supported through a partnership among the Boulder Transportation Connections – a local transportation management organization (TMO), the City of Boulder, and the Regional Transportation District (RTD).

6. A new underpass under Broadway Avenue connecting the University of Colorado Boulder and an adjacent neighborhood provides pedestrian and bicycle access on one of the city's busiest arterials. The project brought together funding from multiple sources including the University. Source: downclimb flickr stream

The evolution of the *TMP* is guided in part by ongoing data collection and reporting by the City. The City conducts its own travel diary-based data to assess individual-level travel modes and destinations, as well as an employer survey. It also collects data related to safety. Locally collected data such as these are integrated with the data collected by the Denver Regional Council of Governments (DRCOG) – the regional metropolitan planning organization (MPO) and the U.S. Census. These data are reported to the community in a variety of documents, including the 2012 *Transportation to Sustain a Community: A Report on Progress*, which offers a summary of key performance data and progress toward achieving key *TMP* goals. Additional reports highlight mode shift data, downtown bike counts, resident and employee survey results, and a variety of other topics. The data inform updates to the *TMP* and highlight key needs or problems. For example, a recent study of vehicle, pedestrian, and bicycle crashes revealed crosswalks as the most frequent location for cross-modal crashes. The City has since instituted a crosswalk safety initiative, with educational efforts and increased enforcement.

Two additional aspects have been critical to Boulder's success in institutionalizing a multi-modal transportation and complete streets focus for the community. First, the City is very

"Money comes to plans a lot faster than plans come to money."

– –

Boulder has been "very entrepreneurial and opportunistic and very well-prepared and able to put their own money on the table."

7. New bus shelter on 28th Street features public art and enhanced landscaping.

> ***"If you're always opportunistic and never do the things that are hard, you'll never have a network."***

successful in finding funding for its transportation planning, construction, maintenance, and operations activities. A local sales tax levy approved by voters provides a dedicated source of funding for transportation, which via the *TMP* is distributed to new facilities as well as operations and maintenance. Additionally, the City is successful in partnering with other agencies and organizations to achieve joint goals. For example, the Transportation Division partnered with the City's Flood Control Utility to incorporate bike and pedestrian facilities along waterways such as Boulder Creek, leveraging flood control projects for broader community benefits and building out a system of greenways. Further, the City coordinates closely with the Regional Transportation District (RTD) to address connections between transit and other modes. The City is also very competitive in securing federal funding for its transportation projects. The City's *TMP* and clear set of priority corridors and projects allows it to outcompete other cities in the Denver region which lack a well-defined and ready set of options to fund. The City's ability to bring its own transportation funds to the table has also allowed it to be opportunistic in pursuing funding partnerships and using its funds to ensure that projects and services (e.g., RTD bus service) meets local needs.

8

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10

8-10. Crossings at Broadway and University Avenues near the University of Colorado safely accomodate automobiles, pedestrians, and bicycles by using signag, signals, and clearly delineated space.

ADDITIONAL PROJECT PHOTOS

11-13. Pedestrian and bicycle facilities are integrated adjacent to Broadway Avenue, a busy arterial that runs north-south through the city connecting the University, downtown, and northern neighborhoods.

"Engineers are your best problem solvers – – give them the right problem and they will figure out how to solve it."

14-15. 15th Street, a few blocks east of downtown Boulder, typifies the pedestrian and bicycle accommodations in a neighborhood setting.

ADDITIONAL PROJECT PHOTOS

16


17

16-17. Pearl Street in downtown Boulder is closed to automobile traffic for several blocks. It is a shopping destination and hosts a popular farmer's market.


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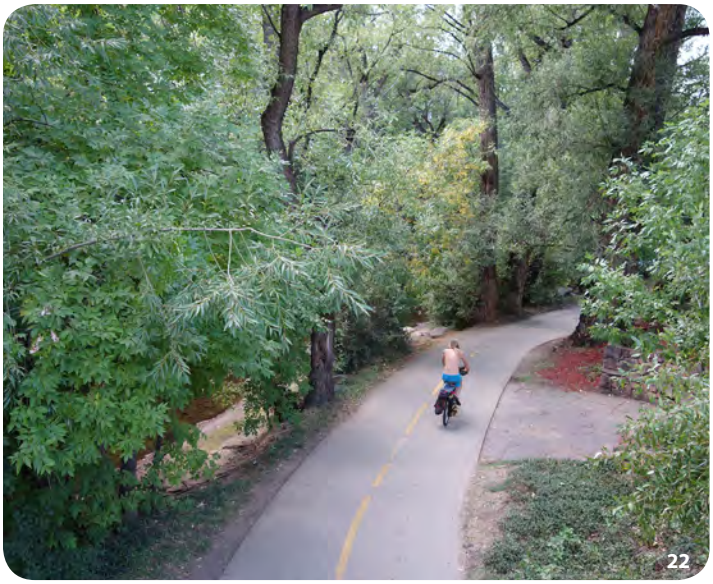
18-21. Sharrows, bicycle lanes, mid-block crossings and other bicycle and pedestrian accommodations are integrated on a wide range of streets, including here near 15th Street and Arapahoe Avenue, on Arapahoe adjacent to Boulder High School, and on University Avenue and 17th Street.



22-24. Boulder Creek Multi-Use Path is located in the floodway, connecting east-west across the city. This and other greenways in the city are heavily used and well-connected to on-street facilities.

25-26. Bike lanes on Broadway Avenue in northern Boulder shows application in a more suburban setting. The roadway is an important north-south connection between residential areas, downtown, and the University of Colorado Boulder.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

27-30. 28th Street and Iris Avenue roadway improvements incorporated enhanced pedestrian crossings, new bus shelters and pull-outs, new signage and medians, and bike lanes in a suburban context.

CASE STUDY 4

Charlotte, North Carolina

OVERVIEW

The City of Charlotte offers a valuable example of institutionalizing complete streets into ongoing transportation and land use planning efforts. Relying significantly on its *Urban Street Design Guidelines* (USDG) passed in 2007, Charlotte moved quickly in reorienting its focus from vehicle mobility to developing a multi-modal urban network. The *Guidelines* influence the City's *Transportation Action Plan* (TAP)– its comprehensive transportation plan for all transportation modes, which has been integrated into City policy through updates to municipal ordinances. The City's large and integrated Department of Transportation helps facilitate coordination across modes. Additional collaboration with planning and engineering is central to Charlotte's success, as well as a high level of political support. The City's work on complete streets is extensive, with dozens of new, reconstructed, or rebuilt major thoroughfares, streetscapes, road conversions, and intersection projects, and over 100 sidewalk projects (City of Charlotte 2011).

KEY FINDINGS

- Translating the *Urban Street Design Guidelines* into the City's ordinances has been central to facilitating complete streets implementation through the private development process.
- Private sector development and redevelopment can offer key opportunities to gain right of way and infrastructure improvements for complete streets.
- Strong leadership on complete streets from department and division heads has been critical in fostering interdepartmental coordination and changing culture.
- Political leadership is essential to supporting community innovation.

CONTEXT

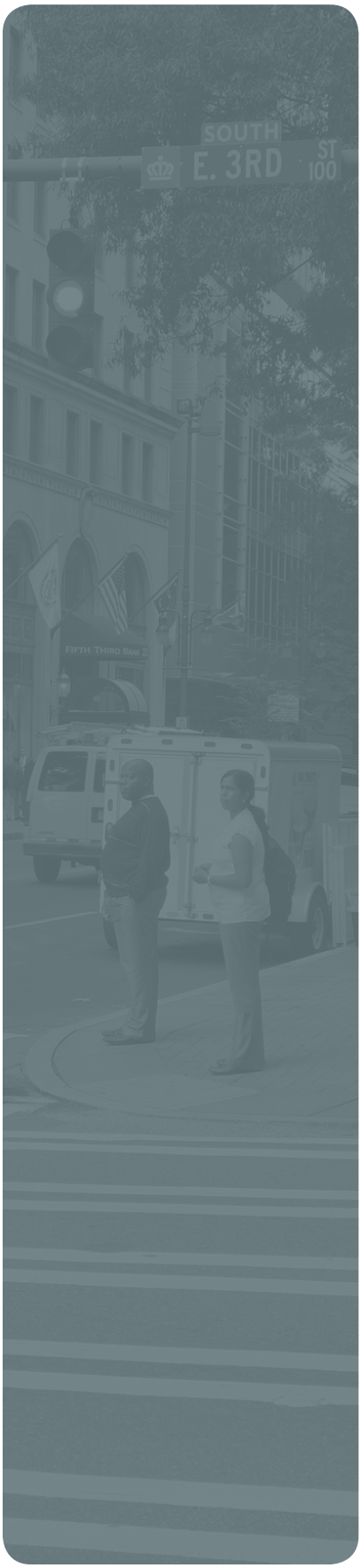
With a 2010 population of just over 731,000 (U.S. Census), Charlotte is by far the largest city in the state of North Carolina. The City is located in one of the fastest growing metropolitan areas in the country, growing 31% in the 2000s and with a current population of over 1.7 million (Charlotte Chamber). The city is very large, spanning 298 square miles (U.S. Census) from the urban downtown core through former streetcar neighborhoods and active and redeveloping industrial and mill districts to auto-oriented suburban development along the vehicle transportation network radiating out of downtown. The LYNX Blue Line, running southwest out of downtown, is beginning to foster redevelopment especially near downtown and surrounding neighborhoods. A bike share system also has been recently initiated.

1. Charlotte's new B-cycle bike share system features stations in downtown, near college campuses, and at some LYNX light rail stations.

2. Pedestrian/bike path connecting the LYNX light rail with a nearby mixed use development.

Community Stats

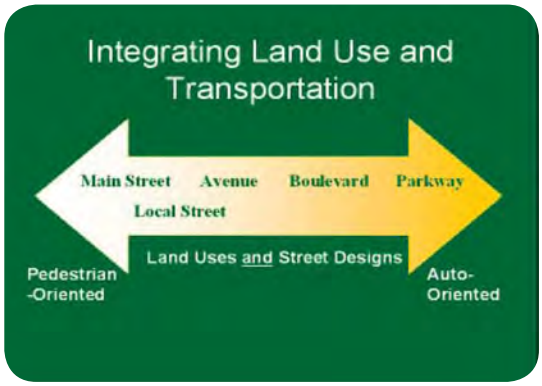
Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration



DOCUMENTS

Urban Street Design Guidelines (USDG)

Approved in 2007, the *USDG* "describes how the planning and design of Charlotte's streets and intersections will support livability and economic development objectives and create more travel choices." This document specifies new street types intended to create an urban street network, offers a vision for designing streets for multiple users – "more streets for more people," and outlines a six-step process for applying the *USDG*. The document also outlines design guidelines for each of the street types, as well as details related to intersection design.



This graphic in the USDG illustrates continuum of new street types from pedestrian- to auto-oriented (source: City of Charlotte, 2007)

Transportation Action Plan (TAP)

This plan is updated every five years, with the most recent version approved in 2011. The *TAP* serves as the City's comprehensive transportation plan, specifying goals, policies, and implementation strategies. The *TAP* is informed by the *Centers, Corridors, and Wedges Growth Framework* updated by the City in 2010 – which provides a transportation-informed land development framework. The *USDG* is officially designated as a component of the *TAP*. Relative to complete streets, the *TAP* refers to enhancing livability, promoting transportation choices, and fostering active living. Several policies specifically reference the *USDG*.

Bicycle Plan

Approved in 2008, the *Charlotte Bicycle Master Plan* "sets forward a blueprint for an accessible, connected and comfortable network of bicycle facilities in the City of Charlotte" (p. 4). The *Plan* specifies a future network of bicycle facilities to be completed by 2030, including adding hundreds of miles of additional bike lanes. In addition to addressing infrastructure, the *Plan* addresses education, promotion, safety, and funding.

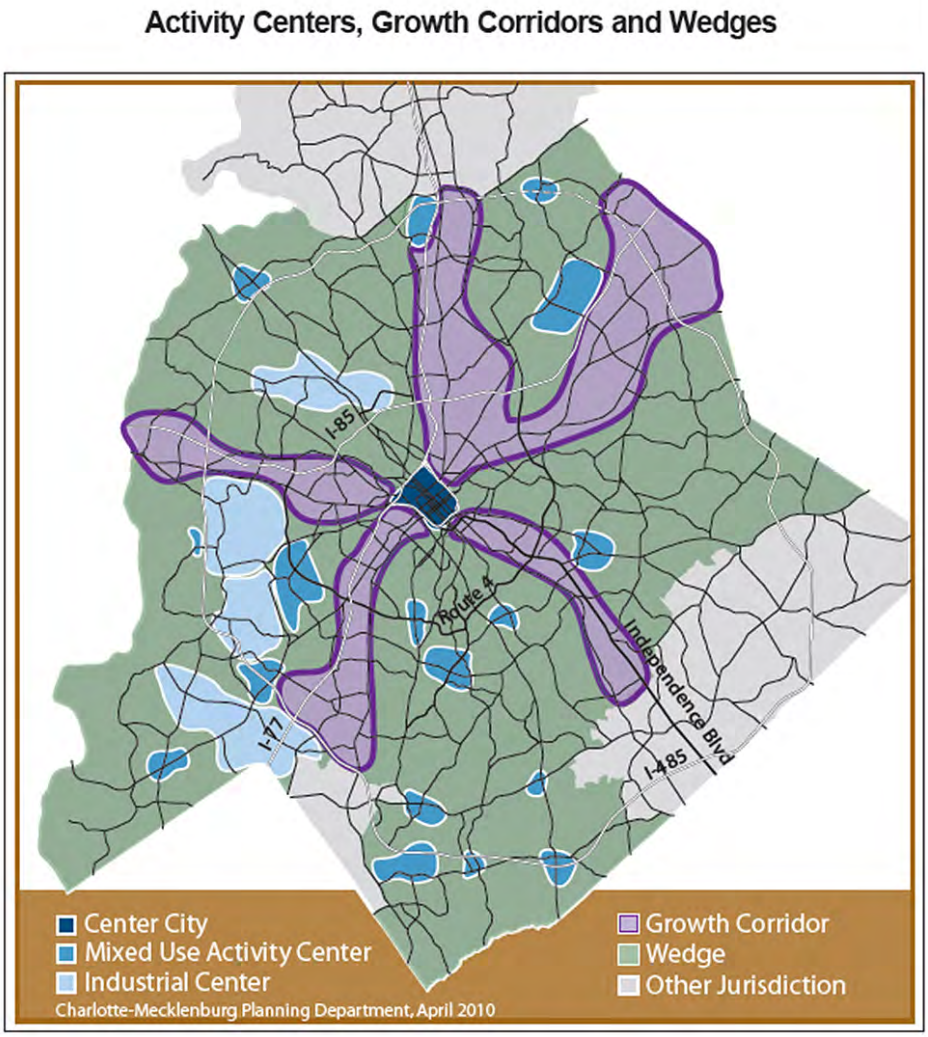
3. East Boulevard mid-block crossing near Freedom Park and intersection with Queens Drive and Kings Drive. Roadway features medians, landscaping, and a bike lane.

PRACTICE

Based on several years of applying multi-modal transportation planning approaches in the City of Charlotte, the Department of Transportation led a formalization of its approach through its development of the *USDG*. Charlotte and the surrounding region had been growing quickly for several decades and it was determined that a new way of designing streets was needed. As one City staff person noted, "people realized that something wasn't quite right with the streets" and that they were using transportation planning and design methods that were solely focused on assessing motor vehicle level of service. Traffic and congestion had increased over time and efforts to continue to simply widen roads were deemed insufficient in addressing transportation needs. In some cases, widening roads was impossible due to narrow right of ways in older parts of the city. In addition, Charlotte's radial roadway pattern with major transportation corridors flowing outward from the downtown and the lack of connected grid in many parts of the city, limited the interconnections in the street network. Charlotte was experiencing an influx of people wanting different transportation and housing options and preparing for its first light rail line. These factors, in addition to strong leadership in the Charlotte Department of Transportation and among elected officials, led to the creation of the *USDG*.

The *USDG* provides the foundation for complete streets in Charlotte, as established through its six guiding principles (see text box, following page). The *USDG* is applied to new and modified streets, as well as to those maintained by the North Carolina Department of Transportation. The *USDG* is justified as a means of offering a "better plan for growth and development" and the document specifically acknowledges that the City's ability to accommodate "growth using the same development and transportation approaches as were used during previous decades is questionable at best." In offering these statements, the *USDG* is not just a transportation initiative, but instead places transportation within the broader context of advancing Charlotte's quality of life and economic development. The central component of the *USDG* is the specification of new street types – which moves away

> ***"We don't look at them as complete streets projects, just as projects."***
>
> ***"The burden falls on the ommission [of complete streets] rather than the addition."***



This graphic from the Centers, Corridors, and Wedges Growth Framework document illustrates transportation corridors radiating out of downtown and challenges associated with creating a finer grain network of transportation connections. source: City of Charlotte 2007

"The way that we can bring value is in how we do our infrastructure."

USDG Guiding Principles

1. Streets are a critical component of public space.
2. Streets play a major role in establishing the image and identity of a city.
3. Streets provide the critical framework for current and future development.
4. Charlotte's streets will be designed to provide mobility and support livability and economic development goals.
5. The safety, convenience, and comfort of motorists, cyclists, pedestrians, transit riders, and neighborhood residents will be considered when planning and designing Charlotte's streets.
6. Planning and designing streets must be a collaborative process, to ensure that a variety of perspectives are considered.

source: City of Charlotte Urban Street Design Guidelines 2007

from the more typical level of service and functional classification approaches to characterizing streets. The five street types include: (1) main streets, (2) avenues, (3) boulevards, (4) parkways, and (5) local streets. Additional details are provided in the text box on the following page, with descriptions highlighting not only the character of the street, but also the typical land use context. The *USDG* provides guidelines for designing street components, and cross sections for illustration. In addition, the *USDG* provides details related to intersection design, offering graphics and useful matrices to help assess the inclusion and design of key elements such as pedestrian refuge islands, bicycle lanes, left turn lanes, bike detectors, and bus pullouts. The *USDG* applies to both public and private projects and is implemented through a new six-step planning process that requires explicit attention to the land use and urban design context, deficiencies such as gaps in the bicycle network, and tradeoffs among desired elements.

4-6. Scaleybark Station on LYNX light rail line on South Boulevard offers enhanced pedestrian crossings and landscaping, buffered wide sidewalks, safety features at rail crossing, and a park and ride facility.

The *USDG* is a component of the *Transportation Action Plan*, specifying "methodologies and recommendations for implementing key aspects of the *TAP* – increasing the quantity and quality of streets, enhancing the integration of land use and transportation decision-making (sometimes on a block-by-block basis), and providing 'complete' streets for residents, property owners, and all types of travelers." The *TAP* serves as the comprehensive transportation plan, offering goals,

policies, and implementation strategies, as well as allocating funds across various transportation spending categories (e.g. bridges, street connectivity, traffic control devices, curb and gutter). Project funding requests are submitted in a biannual Capital Improvements Program (CIP) package. In addition to municipal funding for some large projects, complete streets improvements are pursued through ongoing street improvements including resurfacing. The private development process has also been central to acquiring right-of-ways and offsite improvements as development and redevelopment has occurred in new subdivisions and along existing transportation corridors. The *USDG* has been integrated into City policy through updates to three key ordinances that affect private and public development projects – subdivision ordinance, tree ordinance, and the land development standards manual, which includes guidelines for street design and storm drainage facilities.

7. New bike box and lanes on Carson Boulevard at South Boulevard near the Carson Station on the LYNX light rail line provides multi-modal connections.

Main Streets. These function as "destination" streets, providing access to and function as centers of civic, social, and commercial activity. Main Streets are designed to provide the highest level of comfort, security and access for pedestrians. Development along Main Streets is dense and focused toward the pedestrian realm. Land uses on Main Streets are typically mixed and are generators and attractors of pedestrian activity.

Avenues. These serve a variety of functions in a diversity of land use contexts, providing access from neighborhoods to commercial areas, between major inter-city destinations and, in some cases, through neighborhoods. Avenues offer transportation choices and are designed to provide a balance of service for all modes of transport.

Boulevards. These are designed to move large numbers of motor vehicles as "through traffic" from one part of the city to another and to lower level streets. Vehicle movement is a priority, though pedestrians and cyclists are still provided for in the design – with higher vehicle speeds/volumes increasing the need for safe bicycle and pedestrian treatments (e.g. buffers). Land uses vary, but is typically set further back from the street than on avenues.

Parkways. These are the most auto-oriented streets, with the primary function of moving motor vehicles efficiently from one part of the metropolitan region to another and providing access to major destinations. Design decisions typically favor the automobile.

Local streets. These represent the majority of lane miles in the city and provide access to residential, industrial, or commercial districts, as well as mixed-use areas. Speeds and motor vehicle volumes are low, creating a safe and comfortable environment for bicyclists and pedestrians.

source: City of Charlotte Urban Street Design Guidelines, 2007

8. Metropolitan Avenue in a new redevelopment area near downtown Charlotte accommodates a large of amount of vehicular traffic utilizing the nearby commercial center. The street was designed to accommodate motor vehicle travel lanes, bus pullouts, enhanced pedestrian crossings, and bike lanes which continue across a nearby bridge over the Little Sugar Creek Greenway.

ADDITIONAL PROJECT PHOTOS

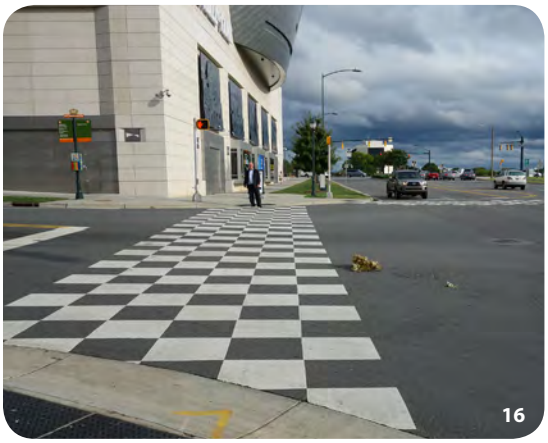
9. 4th and Trade Street intersection in Uptown Charlotte has enhanced pedestrian crossings/signals, directional signage, bike lane, and bike share station.

10-11. Tryon Street streetscape includes landscaping, wide sidewalks, paved crossings, countdown signals, enhanced bus shelters, benches, bike parking, and public art.

12. Dewitt Lane mid-block crossing near Scaleybark Station on the LYNX light rail line.

13. East Boulevard and Kenilworth Avenue intersection in the Dilworth neighborhood. Existing development along the roadway offers limited right-of-way and thus a combination of bike lanes and sharrows are used to accommodate bicycles on this busy commercial street. Enhanced crosswalks and pedestrian signals are also provided.

14-15. East Boulevard, a former streetcar route in the Dilworth Historic District near downtown, was redesigned in a controversial but successful effort to reduce speeds and enhance safety. New features include reduced motor vehicle lanes, new bike lanes, enhanced pedestrian crossings and signage, pedestrian refuges, and enhanced landscaping.



16. Checkered flag crosswalk leading to the Nascar Hall of Fame in Uptown Charlotte.

17. Bicycle lanes and crossing on Old Pineville Road lead cyclists from on-street to off-street facility.

18. Elizabeth Avenue, which runs through Central Piedmont Community College, was recently rebuilt with track laid for a planned streetcar line. The streetcar project will be completed in 2014, but the installation of track was coordinated with recent road construction. The roadway accommodates a large of amount of vehicle, bicycle, and pedestrian traffic. Mid-block crossings and signage and bike lanes facilitate non-motorized travel.

ADDITIONAL PROJECT PHOTOS

19-21. Clanton Road improvements incorporated bike lanes, a median, turn lanes, and neighborhood connections to a park and greenway trail.

22-24. The Little Sugar Creek Greenway is a multi-use trail that runs adjacent to South Kings Drive and next to Little Sugar Creek, a recently daylighted and restored urban waterway. The trail connects to downtown Charlotte and many employment and commercial destinations. It features public art, information and directional signage, enhanced landscaping, and connections to nearby streets, destinations, and neighborhoods.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

25-26. Streetscape elements on Tryon Street in downtown Charlotte.

CASE STUDY 5

Columbus, Ohio

OVERVIEW

In the Columbus region, complete streets is pursued by the Mid-Ohio Regional Planning Commission (MORPC), as well as by several local governments including Columbus, Hilliard, and Westerville, which have approved complete streets policies or resolutions. MORPC has offered a regional framework through its *Complete Streets Policy* and *Complete Streets Toolkit*, which serves as a resource for "local governments, project sponsors, consultants, engineers, and planners in central Ohio to plan, design, and implement Complete Streets." It has also tied regional transportation funding for local projects to complete streets criteria and has supported education and outreach opportunities for local governments. Staff and elected officials in other communities in the Columbus region have pursued complete streets projects in a variety of contexts (e.g. downtown core, main street, urban/suburban neighborhood, arterial). Local advocates and media have played an important role in advancing policies and public awareness.

KEY FINDINGS

- Regional governments can play a central role in promoting and funding complete streets.
- Tying the distribution of federal transportation funds to compliance with MPO policy is critical in incentivizing local action on complete streets.
- Framing complete streets as advancing quality of life and addressing the impacts of changing demographics, can reduce opposition.
- Local elected officials can be critical advocates for moving complete streets from concept to implementation.
- Reorganizing local government to elevate mobility and multi-modal transportation concerns can facilitate leadership and funding for transportation innovation.

CONTEXT

The Columbus regional population was 1.9 million according to the 2010 U.S. Census, with the City of Columbus accounting for about 41 percent of that population at 787,000. In addition to the City of Columbus, suburban communities leading on complete streets in the region include Hilliard (population 29,000) and Westerville (population 37,000). Columbus is quite large in terms of its geographic area of 217 square miles, including a downtown core, older neighborhoods, and older suburban residential and commercial districts. The city is home to Ohio State University, which

1-2. Streetscape redesign on Main Street in Hilliard includes numerous aesthetic improvements intended to enhance the experience for all users.

Community Stats

1,907,974 persons — population	1,132* sq. miles — total area
4.3 percent — commute by bike, walk, transit	27.7 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration
*Metropolitan Planning Organization (MPO) area (source: U.S. Department of Transportation MPO Database)

"Advocacy is about getting citizens in the community to do what they think needs to happen, to happen."

– –

"With culture changes comes some contention."

enrolls nearly 57,000 students on its Columbus campus and employs over 28,000 people (Ohio State University). MORPC is a voluntary association of local governments, including 12 counties and 44 governments. MORPC functions as the federally-designated metropolitan planning organization (MPO) for the Columbus region through its transportation department. MORPC's complete streets policy requires that recipients of federal funds through the MPO comply with the policy. The regional government also addresses housing, environment/energy, and regional land use planning and development.

DOCUMENTS

Mid-Ohio Regional Planning Commission Complete Streets Policy

Approved in 2010, the *Complete Streets Policy* begins by citing ongoing efforts by MORPC to identify efforts to understand and promote approaches that will make the Columbus region "as attractive, livable, and prosperous as possible." Complete streets is thus framed as not just a transportation effort, but a broader contribution to promoting quality of life and economic competitiveness. The *Policy* is intended to help implement the 2007 *Regional Connections: A Collaborative Vision for Central Ohio's Future* report, which is intended to respond to regional demographic and other changes over the next two to three decades. The *Policy* specifies MORPC's role in promoting complete streets in the region and recommends that local governments and the state of Ohio adopt complete streets policies. The *Policy* also spells out the requirement that local projects submitted for federal transportation funds from the MPO comply with the *Complete Streets Policy.*

Complete Streets Toolkit: A Guide for Central Ohio Communities

Approved in 2012 by the Mid-Ohio Regional Planning Commission, the *Complete Streets Toolkit* is intended as a resource for local governments, consultants, engineers, and planners in the Columbus region as they consider ways to pursue complete streets. The development of the *Toolkit* was funded with a grant from the Ohio Department of Health's Statewide Wellness and Obesity Prevention Program. The *Toolkit* offers templates for complete streets policies for urban, suburban, and rural contexts. The document provides resources and examples related to a wide range of topics such as land use, zoning, transit, and parking. The document is structured around 5 E's deemed critical to advancing complete streets, including (1) Engineering, (2) Education, (3) Enforcement, (4) Encouragement, and (5) Evaluation. Promotion of the *Toolkit* has been pursued through an extensive outreach effort by MORPC.

3. Bike lanes and signage on West Broad Street near the Ohio Department of Transportation illustrate complete streets on a wide arterial street.

MORPC Complete Streets Policy specifies:

Definition:
Complete streets are roadways designed to safely and comfortably accommodate all users, including, but not limited to motorists, cyclists, pedestrians, transit and school bus riders, delivery and service personnel, freight haulers, and emergency responders. "All users" includes people of all ages and abilities.

Vision/Purpose:
To create an equitable, balanced, and effective transportation system where every roadway user can travel safely and comfortably and where sustainable transportation options are available to everyone.

Goals:
1. To create a comprehensive, integrated, and connected transportation network that supports compact, sustainable development and provides livable communities.
2. To ensure safety, ease of use, and ease of transfer between modes for all users of the transportation system.
3. To provide flexibility for different types of streets, areas, and users.

source: Mid-Ohio Regional Planning Commission

City of Columbus Complete Streets Resolution

The City of Columbus passed its *Complete Streets Resolution* in 2008. The *Resolution* affirms the City's commitment to ensuring "that whenever possible, the entire right of way of every Columbus roadway is designed and operated to enable safe access for all users." The *Resolution* emphasizes that "pedestrians, bicyclists, motorists and transit riders of all ages and abilities" should be able to move safely on or across a complete street. The *Resolution* also specifies the content of a "good Complete Streets policy" and calls for City departments to include complete streets policies "in all street construction, reconstruction and repair projects."

City of Hilliard Complete Streets Policy

The City of Hilliard, a suburban community in the northwestern portion of the Columbus region, unanimously adopted its *Complete Streets Policy* in 2012 following a number of years complete streets practice in the community. As a policy, rather than a resolution, the document goes further than that of Columbus, in specifying a range of complete streets principles for the design of the transportation system (e.g. provide five foot wide minimum width for sidewalks with six foot width desired along arterials and in high pedestrian areas; install landscape treatments, street furniture, bicycle parking, and buffers between vehicle lanes and sidewalks or multi-use paths, where appropriate, to provide a more pleasant and accommodating street side environment). The *Policy* clearly specifies its application to both public sector transportation infrastructure and private development proposals.

City of Westerville Complete Streets Resolution

The City of Westerville, a suburban community in the northern part of the Columbus region, passed its *Complete Streets Resolution* in 2012. The *Resolution* is very brief, but is clear in expressing support for complete streets and calling for consideration of complete streets principles relative to transportation and development projects. The document cites safety, accessibility, congestion reduction, economic growth, and community stability as benefits of complete streets.

MORPC Complete Streets Toolkit 5 E's

1. **Engineering** refers to operational and physical improvements to the transportation infrastructure, such as building safer walkways or reducing speed limits along a certain corridor.
2. **Education** is an important element to teach transportation users the appropriate traffic safety skills and to ensure that everyone understands the benefits and use of new facilities, such as roundabouts.
3. **Enforcement** ensures that all roadway users obey traffic laws, behave safely, and share the road with one another.
4. **Encouragement** refers to programs and strategies that create excitement and interest to utilize the built environment, such as a new path or transit line.
5. **Evaluation** is critical in understanding if the infrastructure changes or education or enforcement efforts are showing positive results.

source: Mid-Ohio Regional Planning Commission

"It's so cool to see different silos working together."

PRACTICE

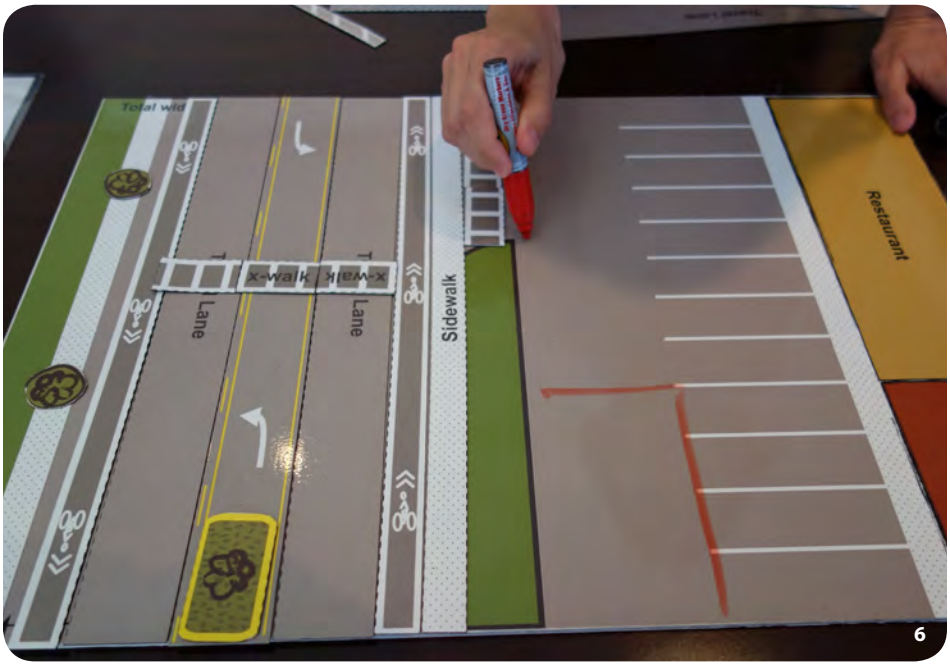
4-5. Streetscape redesign on Main Street in Hilliard includes bumpouts, wide sidewalks, landscaping, benches, bicycle parking, enhanced signage, lighting, and crosswalks.

> MORPC is working to create "lifelong communities." The goal is to ensure central Ohio's cities, villages, townships and counties continue to prosper, attract and retain businesses and residents, and in return have a richer tax base to support important programs, such as infrastructure, education and social services. An important facet of Lifelong Communities is Complete Streets."
>
> source: Mid-Ohio Regional Planning Commission 2012-2035 Metropolitan Transportation Plan

The Mid-Ohio Regional Planning Commission (MORPC) has played a key leadership role in advancing complete streets in the Columbus region. As both an MPO and regional planning agency, it has taken both direct and indirect action to advance complete streets. Most directly, MORPC's complete streets policy explicitly ties regional transportation funding for local governments to the provision of complete streets components in proposed projects. The policy was approved in 2010, based on feedback from a working group consisting of participants representing engineering, transit, health, parks and recreation, and advocate groups. To assist local governments in developing their complete streets programs and to help them identify ways to help them respond to the regional funding incentive, the Complete Streets Toolkit offers a valuable resource.

MORPC's initial framing of complete streets as largely a transportation issue evolved between the approval of the policy and the development of theToolkit. With feedback from some local government officials, the framing was broadened to focus more on transportation as a component of successful communities that are competitive and responsive to changes in demographics and expectations of younger residents. Reflecting this framing is a short video produced in 2011 by MORPC called "Rethinking Streets for Successful Communities." Further outreach included a Complete Streets Workshop with hands-on activities, presentations, and discussions among regional policy makers, and a Real Estate Trends Workshop for developers, real estate professionals, local government officials, planners, and architects to explore demographic and market changes in the region.

In addition to the complete streets focused activities noted above, MORPC advances and educates regarding complete streets through the *Metropolitan Transportation Plan* which outlines strategies and projects through 2035. This *Plan* mentions complete streets numerous times, providing background information and emphasizing the connection between complete streets and land use, safety, mobility, accessibility, and health. The *Plan* also highlights the "lifelong communities"

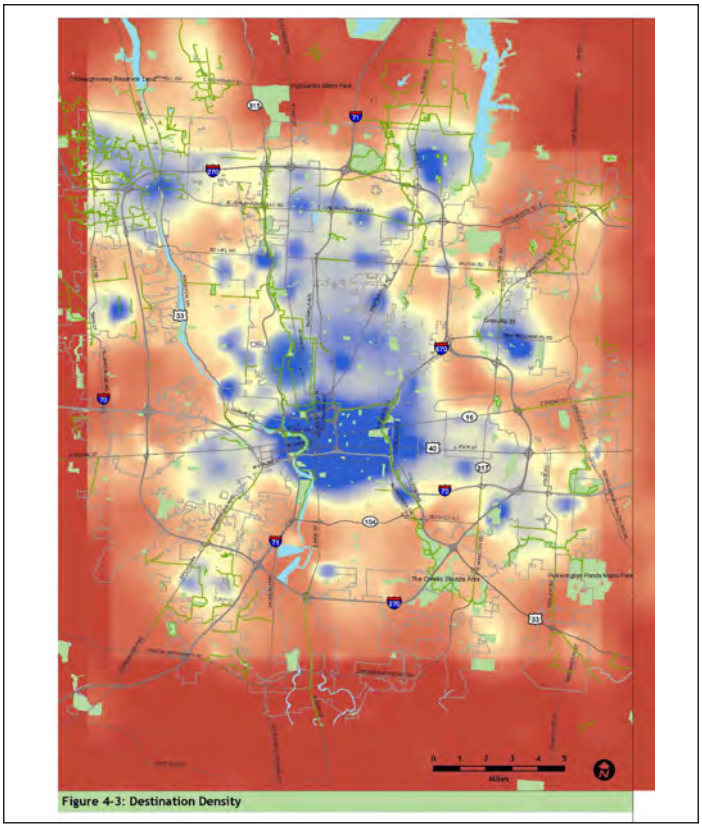


6. A 2011 Complete Streets Workshop exercise actively engaged participants in redesigning streets and their contexts, experimenting with interventions such as crosswalks, bike lanes, landscaping, striping, lane alignments, and land use changes.

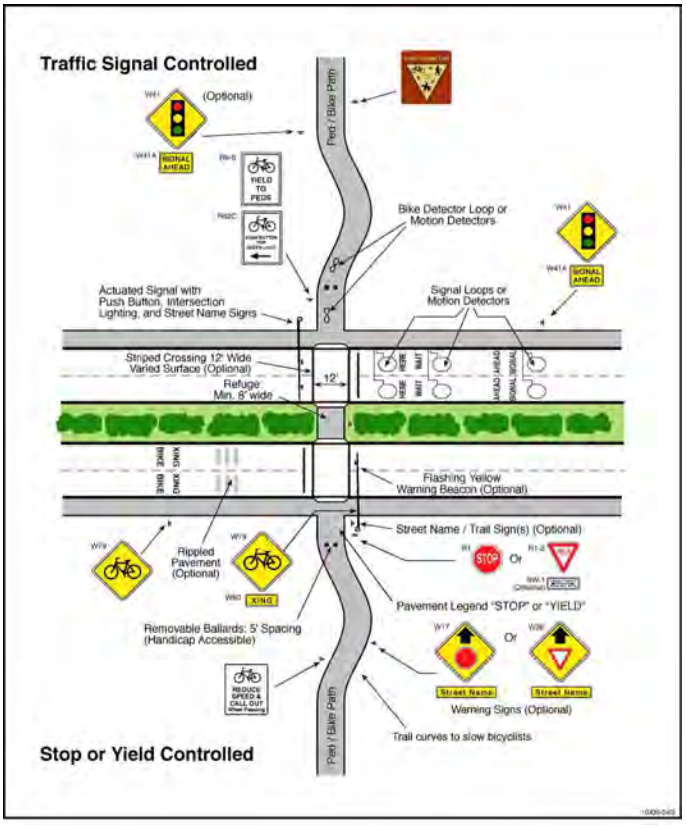
concept, which builds on the idea of successful communities noted above and emphasizes the long term viability of community services and infrastructure. Notably, MORPC also supports local complete streets efforts by allowing communities to borrow equipment to assess local impacts, including bicycle/pedestrian counters for trails and on-road bicycle counters.

In addition to MORPC, three local governments have emerged as leaders on complete streets in the Columbus region. First, the City of Columbus passed its *Complete Streets Resolution* in 2008, calling for City departments to address complete streets and according to local officials, strengthened bikeway and sidewalk accommodation for both the City and private developers. The City's efforts were significantly bolstered by high level support from the mayor and city council. While there has been some external criticism of the City's decision to pursue only the Resolution since it does not require complete streets, the City has moved forward with many projects. In addition, the City's *2008 Bicentennial Bikeways Plan* serves as a primary guiding documents relative to complete streets, with its ambitious goal of providing "a new legacy as the city moves forward towards a sustainable future: a future in which Columbus is a world-class bicycling city, where people of all ages and skill levels can easily bicycle to work, to shop, for fun, for exercise, and where people will choose to bicycle rather than drive." The *Plan* is intended as a long-term vision for developing a bicycle network that includes on- and off-street facilities and bicycle parking. The *Plan* includes goals and benchmarks; an existing conditions summary; a needs analysis; detailed recommended projects, education/encouragement/enforcement programs; funding and implementation discussion; and design guidelines.

"If you 'tie anything to funding it's always going to have a positive effect.'"



Destination density map in the 2008 Columbus Bicentennial Bikeways Plan identifies areas likely to attract bicyclists, such as shopping centers, parks, employment areas, schools, and places of worship.



Design guidelines in the 2008 Columbus Bicentennial Bikeways Plan include detailed illustrations and photos related to a wide range of design treatments, including this graphic depicting a shared use path mid-block crossing.

"You can't ever not account for public reaction."

– –

"You have to see it from their side."

In addition to Columbus, the Cities of Hilliard and Westerville took local action on complete streets in 2012. Both cities were small towns that grew into suburban communities as the Columbus region grew over time. Both are located just outside of the Interstate 270 beltway that encircles the metropolitan area. Even prior to the passage of its *Complete Streets Policy* in 2012, the City of Hilliard had pursued a number of complete streets projects – "doing complete streets before it became a buzzword." Key projects include a streetscape redesign in the downtown mainstreet area to make it more pedestrian friendly and a double roundabout in a suburban commercial area near a school. The recent comprehensive plan update was critical in affirming support for multi-modal transportation, and many public meetings were conducted to explore the public's priorities, which included being able to walk to destinations in the community.

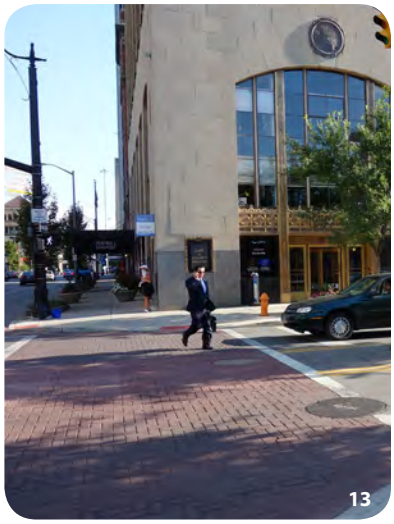
The City of Westerville approved its *Complete Streets Resolution* in 2012 as well, but similarly notes a history of practice even before the City Council acted on the *Resolution*. The *Resolution* specifies a desire to make the city accessible and ensure that safe travel choices are available to for all. In addition to community-specific on-road projects, Westerville has been a leader in advancing regional trails and has pursued partnerships on trails with adjacent communities. As well as partnerships, the Westerville's planning efforts have allowed the community to purchase right-of-way well in advance of projects, compete effectively for grant funding, and proactively take advantage of roadway projects to pursue widening, road diets, sharrows, and other treatments. Westerville has also experienced value and community support in association with recognition it has received from the League of American Bicyclists and the Ohio Department of Health. The City's "Adopt a Foot" program has helped raise funds from local residents to support the local trail system.

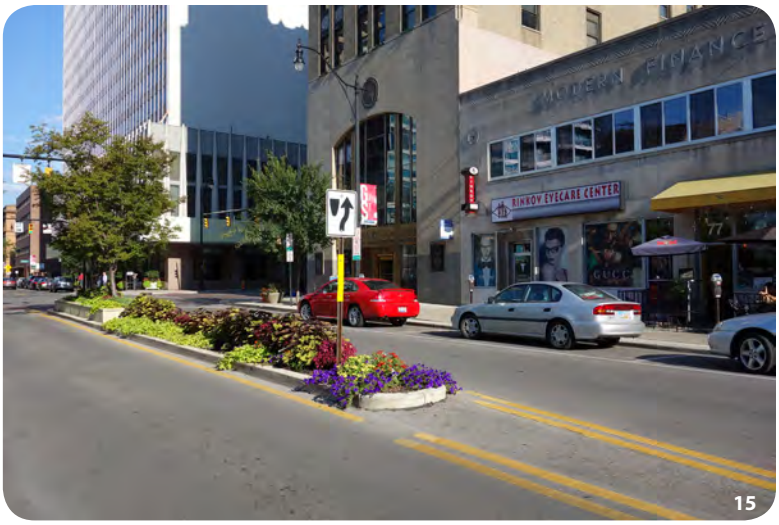
7. The Westerville B & W (Bike and Walk) Route connects through Hanby Park near the City's downtown, and a new train depot inspired bicycle hub was recently constructed. The bicycle hub includes a picnic shelter, restrooms, drinking fountains, an informational kiosk, and bicycle parking. It was partially funded through an "Adopt a Brick" program, which allowed local residents to contribute funding to the project.

8-10. A double roundabout on Main Street near Cemetery Road in Hilliard includes a number of design features intended to accommodate multiple modes, including young pedestrians and buses from the nearby school.

11. The double roundabout was designed to manage roadway traffic, pedestrian and bus traffic from a nearby school, and business access. The roundabout features automobile and pedestrian signage, pedestrian crossings and refuges, roadway and crosswalk striping and pavers, and landscaped center islands.

ADDITIONAL PROJECT PHOTOS





12-15. Gay Street in downtown Columbus was recently converted from a one-way street to a two-way to enhance access and safety. The redesign features on-street parking (including some angled parking), planted medians and landscaping, wide sidewalks, enhanced crossings, lighting, and signage. Local officials report that the project is bicycle friendly and has helped foster economic development. Additional downtown streets have also been converted to two-way streets in the past several years.

13-14. Morse Road between Northtowne Boulevard and Cleveland Avenue in northern Columbus is a road improvement project that incorporated wide sidewalks and landscaped buffers, enhanced transit shelters, signage, and bike lanes. The development pattern is very suburban and features wide setbacks with parking in front, as well as many large buildings and a frontage road on one side.

22-25. High Street adjacent to the Ohio State University campus in Columbus, accommodates a high volume of vehicle, transit, pedestrian, and bicycle traffic. Signage, wide crosswalks, and lighted intersections are provided to manage the intersection of modes.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

18-21. Milton Avenue in Columbus runs through residential neighborhoods and connects to Olentangy Trail (an over 13 mile route that connects from northern Columbus to downtown). The road is designed as a bike boulevard, on which bicycle traffic is mixed with auto traffic on relatively narrow streets. At one key crossing, bike boxes and signage are used to give bicycles priority access.

CASE STUDY 6

Dubuque, Iowa

OVERVIEW

The City of Dubuque Iowa offers an example of how complete streets efforts often emerge through on-going community planning initiatives to address a city's livability and sustainability, and how a pilot project can catapult complete streets into the community consciousness. The City's complete streets policy was adopted unanimously in 2011, although by then a district wide complete streets effort was well underway. The revitalization of Dubuque's Historic Millworks District was identified an important priority through various community planning efforts. In response, City staff and partner organizations applied for and received a several million dollar grant from the U.S. Department of Transportation to revitalize the area as a complete streets project. The planning, design, and implementation of the Millwork District Master Plan is an example of an area-wide complete streets process and project.

1. Pedestrian and bicycle accommodations in the Historic Millwork District.

2. Bump outs and caution signage make it safer for pedestrians to cross 10th Street.

KEY FINDINGS

- A highly visible project as a first complete streets effort can garner support from many community members.
- Leadership from advocacy groups, businesses, City departments, and elected officials is essential to transform the way transportation is considered.
- Community visioning efforts can be helpful to identify community priorities for transportation and other local facilities/services.

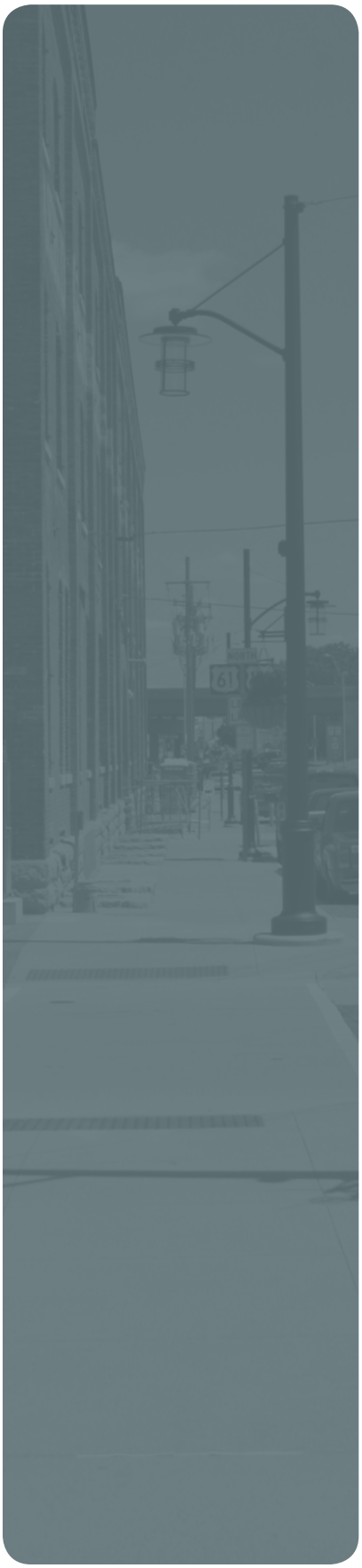
CONTEXT

Situated at the Iowa boarder just near Illinois and Wisconsin, the City of Dubuque's population is just under 58,000 according to the most recent U.S. Census. It is the most populous city located within the Dubuque Metropolitan Area Transportation Study (DMATS) which serves as the metropolitan planning organization (MPO) at the intersection of Iowa, Illinois, and Wisconsin borders. Spanning roughly 30 square miles, Dubuque is set along a bluff on the Mississippi River. The City is known for its unique topography and legacy as an important timber and millwork hub of the Midwest. Of its working population, approximately six percent report walking to work, which is relatively high compared to the national average of 2.8 percent (2011 American Community Survey).

Community Stats

57,637 persons — population	**30** sq. miles — total area
7.3 percent — commute by bike, walk, transit	**42.7** inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration



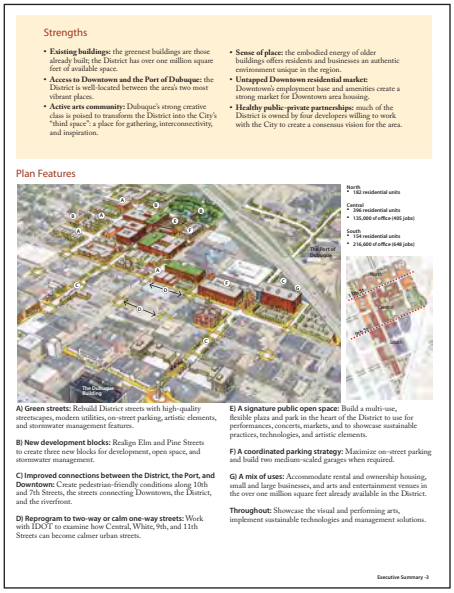
DOCUMENTS

Complete Streets Policy

The City of Dubuque's *Complete Streets Policy* was adopted in spring of 2011 with unanimous city council support. The *Policy* was drafted by staff with public input, and feedback from organizations such as Proudly Accessible Dubuque, Green Dubuque, Tri-State Trail Area Group, and Dubuque Main Street. The *Policy* calls for the development of street projects in an "affordable, balanced, responsible, and equitable way that accommodates and encourages travel by motorists, bicyclists, public transit vehicles and their passengers, and pedestrians of all ages and abilities."

Historic Millwork District Master Plan

The *Historic Millwork District Master Plan* was developed as a guiding document as the City of Dubuque took on the revitalization of its historic millwork district. The *Plan* was drafted before the City adopted its *Complete Streets Policy*, but addressing the public realm and streetscapes are important aspects of this *Plan*. Additionally the City and its partners used this document in applying for and receiving a $5.6 million from the Transportation Investment Generating Economic Recovery (TIGER) grant process by the US Department of Transportation.



The Historic Millwork master planning process was an important effort to understand the potential of the area, and identify ways to generate funding such as the US DOT TIGER grant. These pages of the *Plan* illustrate the district location and street concepts.

Tri-State Area Integrated Walking, Bicycling, Hiking Network Plan

The *Tri-State Area Integrated Walking, Bicycling, Hiking Network Plan* was developed by the East Central Intergovernmental Alliance (ECIA) to guide future planning and development of the non-motorized modes of transportation present in the urbanized area of Dubuque County, the City of East Dubuque and Jo Daviess County in Illinois, and Grant County in Wisconsin. Drafted in 2009, this document provides an analysis of existing conditions related to walking and biking; sets goals and objectives for an integrated walking, bicycling, and hiking network; and provides guidance for future planning and implementation. It explicitly references the need for complete streets and City staff consider the *Plan* a critical guiding document relative to complete streets planning and implementation.

PRACTICE

In Dubuque, interest and engagement in complete streets planning grew out of a number of community planning efforts. In the summer of 2005 Dubuque initiated ENVIS1ON, a "grass-roots effort for all citizens of the Tri-states. . . to make greater Dubuque a better place to live, work and play" (ENVIS1ON, 2005). Ten community priorities were identified through this process, two of which have had a direct impact on complete streets practices in Dubuque: (1) developing an integrated walking/biking/hiking trail system, and (2) warehouse district revitalization.

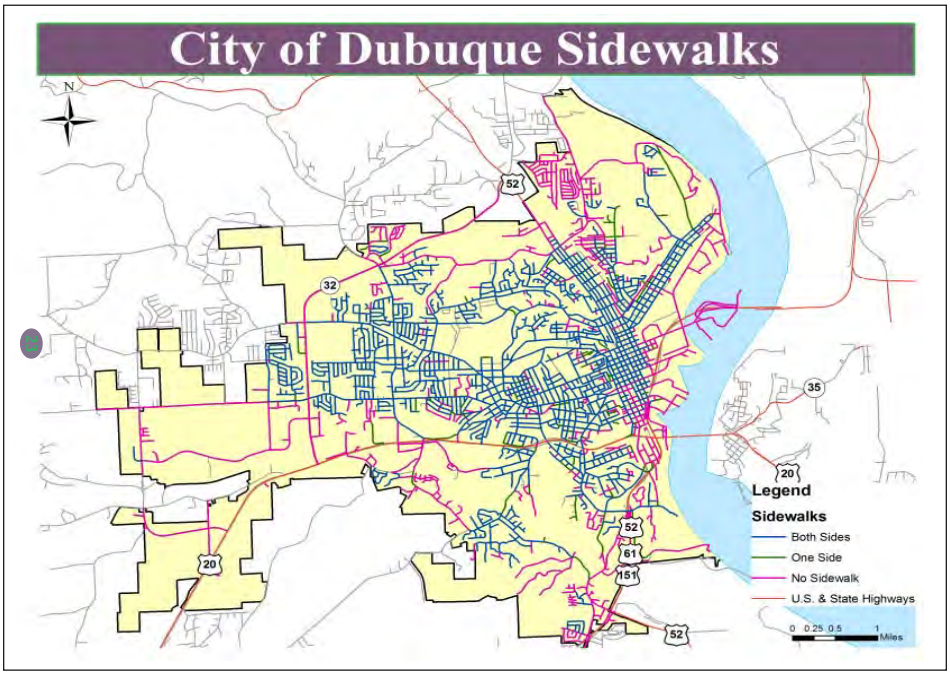
In addition to this effort, in 2006 Dubuque was identified as one of six cities in the nation to receive an American Institute of Architects' grant for professional analysis and recommendations on creating a sustainable path to the future, leading to the formation of Sustainable Dubuque. During this process, the City developed the Sustainable Dubuque Task Force, comprised of a broad range of stakeholder groups. This effort led to a guiding principles document that identified developing a complete streets policy as an important step toward a sustainable future for Dubuque.

"ADA guidelines are the bare minimum [for accessibility]. We asked the question, 'How can we go beyond that?'"

3. The intersection of 10th Street and Jackson Street incorporates bumpouts, wide sidewalks, ADA compliant ramps, and sharrows.

Concurrently, the ECIA was in the process of developing a tri-state area trail plan. The *Plan* identifies a number of goals and objectives, one of which is to "advocate for adoption of complete streets policies by cities and counties in the Tri-State area" (ECIA). Additionally, the *Plan* identifies a number of important planned bike and pedestrian routes. It serves as a guiding document as the City of Dubuque considers implementation of bike and pedestrian improvements.

In 2010 a Green Dubuque staff person drafted The *Social and Economic Impact of the Iowa Complete Streets Act*, cost-benefit analysis of complete and incomplete streets (Green Dubuque 2010). This report and subsequent presentation to the City of Dubuque staff was part of the tipping point moving the City closer



The sidewalk analysis included in the ECIA Tri-State Area Integrated Walking, Bicycling, Hiking Network Plan is referenced for project prioritization and to increase pedestrian connectivity.

> ***"Start with projects you know will be successful and visible. If you have some success stories, you can easily move on from there."***

to developing its own complete streets policy. The groundswell of various efforts coalesced in the spring of 2011 as the City drafted a complete streets policy. After the City received public input, and feedback from organizations such as Proudly Accessible Dubuque, Green Dubuque, Tri-State Trail Area Group, Dubuque Main Street, the *Policy* was unanimously adopted by the city council in April, 2011. The *Policy* serves as a guiding document as City staff plan and implement various capital improvement projects.

The City's first complete streets project is the Historic Millwork District project, a revitalization effort in the previously deteriorating historic district of Dubuque. The master planning effort began in 2009, and it set the vision for this 12 block district as one that would encourage economic development and provide a walkable, livable area in the heart of Dubuque. The City considers this a complete streets pilot project, as does the US Department of Transportation which awarded the City $5.6 million through the TIGER granting process.

From the USDOT TIGER Grant Award Recipients Description

"The [Historic Millwork District] project is a Complete Streets project, which will help create a vibrant environment for the people that live and work in the Historic Millwork District in downtown Dubuque. The objective of the Complete Streets project is to design streets that are attractive, convenient and safe for a broad range of users, including drivers, public transit, pedestrians, bicyclists, people without access to automobiles, children and people with disabilities. . .The project will improve livability in the Millwork District by reducing commute times and providing new and improved travel options for walkers, bicyclists and transit riders. It will improve connectivity and provide greater access for people that are transit-dependent. As many as 60 percent of the new residents within the Historic Millwork District are estimated to be traveling to work downtown and the project will allow them to more conveniently and safely walk, bike or take transit to work. The project will also increase the sustainability of the transportation system by making more fuel efficient travel options more attractive to area residents. The vibrancy of the Complete Streets neighborhood will also encourage economic development and business activity in the downtown area" (US DOT, 2010).

4. Custom lighting and signage was developed for the Millwork District and are found throughout the 12 block area.

Many people were involved in the planning and design of this project, from business owners and advocates to artists who helped develop the iconic street furnishings in the district. The design was an iterative process; the City and its consultant would develop specific street designs and work with stakeholders to get feedback on various design elements. A number of design changes were made to accommodate important freight transportation on a few streets; it was a balancing act between accommodating some of the important employment centers that have been there for decades and developing an improved, accessible public realm for those who may frequent the area when the redevelopment is completed. The Millwork District has become a model of how to develop an entire complete streets district and plan for the transportation modes in a systematic, yet flexible way.

Outside of the downtown area, the City of Dubuque continues to make improvements to its streets, making sidewalks more accessible through widening and adding ADA compliant ramps. In some areas, guided by the Tri-State Area Trail Plan, on street bike facilities are being added to the system when it is possible.

The City, consultants, and advocates all recognize that their complete streets initiatives, whether they are in planning or implementation, should not be done in isolation. Coordination between City departments, with advocacy groups, consultants, the MPO, and the public is important to project acceptance and institutionalizing completes streets as the normal way of addressing streets and the public ream in Dubuque.

5. Custom bike racks in the District.

6. An artist designed planter in the Millwork District.

7. Benches look similar throughout the district, but each one has unique historic imagery as part of its design.

8. In the planning and design process, many stakeholders were involved and multiple uses were accommodates as a result. The intersection of 9th Street and Jackson Street is an example of how the City has accommodated bike, pedestrian, and vehicular traffic, while providing room for large trucks to load and unload at docks.

ADDITIONAL PROJECT PHOTOS

9. The corner of 9th Street and Jackson Street, in the heart of the Millwork District, incorporates historic details, new seating, planters, bike racks, and ample room for pedestrians.

10. Numerous alleys in the Millwork District were also addressed with permeable pavers.

11. Salvaged bricks were reused in some of the streetscaping.

12. On Jackson Street old brick and rail tracks were retained and new elements like sharrows were added.

13. The District is easily navigable by various users, including people in wheel chairs.

14-15. Main Street was redesigned prior to the adoption of a complete streets policy, and it incorporates numerous traffic calming and way finding devices such as these ballards separating vehicular traffic from pedestrians, and highly visible signage calling out key destinations in the City.

16. Pedestrian crossings at Main Street intersections are clearly visible by colored concrete, and the vehicular speeds are slow enough for bikes and cars to safely share space.

17. One of many areas to sit along Main Street.

18. Main Street is also a designated bike route through the City.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

19. New bump outs, ADA compliant ramps, and median along Iowa Street.

20. Wide curb cuts along a Millwork District street.

CASE STUDY 7

Fargo-Moorhead Metro Area

OVERVIEW

In 2010, the Fargo-Moorhead Council of Governments (Metro COG) adopted its *Complete Streets Policy Statement*. The *Policy* is relatively extensive, with a strong focus on describing the benefits of complete streets and ways in which Metro COG can provide support to local communities. Metro COG and local government staff in the Fargo-Moorhead region have lauded the policy for providing valuable guidance without prescriptive requirements, and the National Complete Streets Coalition recognizes it as one of the top metropolitan planning organization (MPO) policies in the nation (National Complete Streets Coalition, 2012). Within the region, the City of Dilworth and Clay County have adopted complete streets resolutions in support of the Metro COG policy.

1. Broadway Drive in downtown Fargo is a busy corridor that accommodates vehicular, freight, and bicycle traffic in shared space.

KEY FINDINGS

- The focus of Metro COG's policy statement on its role as a supportive agency allows flexibility for local governments to determine the implementation approach that best fits their context.
- Cross-agency conversations on transportation and complete streets among cities and with the MPO encourage people to think about complete streets as a regional issue. Communities in the Fargo-Moorhead region largely rely on the Metro COG complete streets policy, rather than developing their own.

2. Broadway Drive also features a comfortable pedestrian realm with sidewalk details and ample seating.

CONTEXT

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) serves as the metropolitan planning organization (MPO) for the cities of Fargo, Moorhead, West Fargo, and Dilworth, plus eight townships in both Cass and Clay Counties. It is a unique metropolitan planning organization in that it spans the Minnesota-North Dakota border and serves residents and local governments in both states. With a 2010 population just under 209,000 (US Census) the Metro COG encompasses a large land mass of 573 square miles (Fargo-Moorhead Metropolitan Council of Governments, 2012). Within the Fargo-Moorhead metropolitan statistical area (MSA), roughly one percent of people who work report either biking or warlking to work, and just over four percent take transit (US Census). Transit is also a key part of the region's transportation system and its ridership continues to grow each year (Fargo-Moorhead Metropolitan Council of Governments, 2012). The City of Fargo and the City of Moorhead jointly operate Metro Area Transit – a public bus system serving Fargo and surrounding communities.

Community Stats

208,777 persons — population	573 sq. miles — total area
5.9 percent — commute by bike, walk, transit	40.8 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

DOCUMENTS

Fargo-Moorhead Metropolitan Area Complete Streets Policy Statement

Approved by the Metro COG's policy board in 2010, the *Complete Streets Policy Statement* is detailed and covers a number of aspects of complete streets. The document outlines the benefits to the community, including both qualitative (e.g. quality of life, accessibility) and quantitative (e.g. safety, congestion, environmental) aspects. The *Policy Statement* also highlights how the action of Metro COG adopting a complete streets policy is in accordance with the Code of Federal Regulations and the United States Code regarding MPO regulations for accommodating bicycling and walking in the planning process. The *Policy Statement* clearly states Metro COG's role as one of encouragement and support for local implementation. The document also offers guidance for communities as they work on implementation. In the *"Local Implementation Guidance: Design"* section, suggestions such as evaluating existing and potential on-road bicycle use in restriping, using colored or textured crosswalks in high-count pedestrian areas are provided.

From the Metro COG Complete Streets Policy Statement

This Policy Statement is meant to act as a guidance document. The guidance within this document is not a requirement set upon any of Metro COG's member local units of government or other federal aid recipients in the FM Metropolitan Area. The hope is that member local units of government will consider all modes of transportation during the planning, design, construction, and operation phases as provided in this Complete Streets Policy Statement.

source: Metro COG

Fargo-Moorhead Metropolitan Bicycle and Pedestrian Plan

Developed in coordination with the Metro COG Bicycle and Pedestrian Committee, local governments, and the general public, the vision of the *2011 Bicycle and Pedestrian Plan* is "[t]o develop and maintain a regional bicycle and pedestrian network that is sustainable, interoperable, efficient and holistic in nature: thus encouraging regular bicycling and walking for the purpose of utility and recreation while improving safety for all users of the network." The *Plan* applies to the Fargo-Moorhead region, details 2011 existing conditions (e.g. existing paths, crash locations) , and sets forth ambitious goals of improving and increasing the bicycle and pedestrian network through coordinated efforts with local government. The document provides guidance in the prioritization of project implementation and is used extensively by Metro COG staff.

3. 4th Street North in Fargo transects various conditions from urban to residential areas north of the City. Near a medical facility lighted pedestrian signage and a median refuge provide a safe crossing for pedestrians who park across the street and are accessing the hospital, clinic, or pharmacy.

PRACTICE

In its role as a metropolitan planning organization (MPO), Metro COG provides guidance to the cities of Fargo, Moorhead, West Fargo, and Dilworth, and eight townships in Cass and Clay counties. In 2010, Metro COG took the lead in establishing a complete streets policy statement for the region, with the support and participation of local governments. Metro COG's Metropolitan Bicycle and Pedestrian Committee, local government staff, and interested residents were engaged in the drafting of the complete streets policy statement. Engaging a wide range of participants in the process of creating the policy was important to Metro COG, as they recognized that support of the policy starts with those directly involved in its drafting. Dilworth and Clay County, both located within the Metro COG, formally passed resolutions supporting Metro COG's policy, integrating complete streets directly into their local efforts and not, as local staff noted, "recreating the wheel" by developing a new policy.

4. Broadway Drive provides a safe pedestrian environment with wide sidewalks and angled parking that separates pedestrians from auto and bike travel lanes.

The purpose of the Metro COG *Complete Streets Policy Statement* to serve as a "guidance document" is clearly stated at the beginning of the document. The *Statement* describes why complete streets are important in the context of the region's transportation system. For example, increasing safety for all modes, mitigating congestion, and increasing accessibility are important benefits of complete streets (see text box at right). The *Policy Statement* articulates steps the Metro COG will take in implementation of its policy, and provides suggestions for local planning, design, and implementation. At the MPO level, Metro COG states it will integrate complete streets criteria into its Transportation Improvement Program (TIP) program, and other planning efforts such as the Long-Range Transportation Plan. Local agencies are encouraged to reference national design standards such as the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities,* AASHTO *Guide for the Planning, Design, and Operation of Pedestrian Facilities,* and the Institute for Transportation Engineer's *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach Recommended Practice*. Other local agency strategies are suggested such as developing a traffic calming policy and implementing a public participation strategy in both planning studies and specific projects. The policy statement also articulates how the complete streets policy statement and Metro COGs guidance is consistent with federal guidance for MPO planning activities.

From the Metro COG Complete Streets Policy Statement

The benefits of [complete streets] can be both qualitative and quantitative, and can act both in the short and long-term:

- Safety – reduction of conflict and encouragement of more predictable interaction among motorists, bicyclists and pedestrians of all ages and abilities
- Environmental – less air and noise pollution
- Maintenance – less use of roads by automobiles if significant mode shifts occur
- Congestion – integration of transit and non-motorized modes can reduce local congestion if a mode shift occurs
- Health – increased physical activity and reduction in healthcare costs
- Accessibility – approximately one-third of the population cannot or does not drive a car (Complete Streets Report, 2009, MnDOT); increased compliance with the Americans with Disabilities Act (ADA) will provide better access for people of all ages
- External Costs – reductions correlated with less costly modal choices
- Economic Activity – A network of complete streets is safer and more appealing to residents and visitors, which is good for retail and commercial development
- Quality of Life – A variety of transportation options allow everyone – particularly people with disabilities and older adults – to get out and stay connected to the community

source: Metro COG, 2010

"The idea of complete streets is hitting us at an appropriate time. We are transitioning from a community thinking about bikes and peds as part of a separate infrastructure system to [those modes] being part of the same system."

The *Policy Statement* describes how it, along with Metro COG staff, can serve as a resource for local communities in their own planning and implementation of complete streets. Overall, the policy statement is intended to offer flexibility, with Metro COG providing guidance, and not be prescriptive in the implementation of complete streets by local governments.

Metro COG offers a number of mechanisms for prioritizing and funding projects. Metro COG's Transportation Improvement Program (TIP) outlines a proposed schedule of federally funded and other regionally significant transportation projects. The TIP serves as a priority list of projects for Metro COG staff. The *Bicycle and Pedestrian Plan*, which identifies project needs and gaps in the bicycle and pedestrian systems, helps contributes to setting priorities. At the same time, Metro COG and local governments in the region remain flexible in responding to funding opportunities or needs that can contribute to regional complete streets goals.

5. Along the downtown portion of Broadway Drive, bicycle parking is provided on every block and at key retail locations.

6. Broadway Drive features at grade pedestrian crossings and a change in pavement material clearly delineating pedestrian crosswalks.

7. In a developing area of Fargo, the City is implementing wider multi-use trails, on-road bike lanes and roundabouts to improve safety for all modes.

8-9. Roundabouts in this section of 25th Street South slow traffic and provide walking and bicycling options for students attending the Stanley Middle School or Sullivan High School.

10. The City of Fargo Engineering Department has experimented with various roundabout configurations and developed a design standard that works well for safety and winter maintenance. This roundabout features a large center island with a flat surface, or apron. This configuration is easier to plow in the winter months and allows large emergency vehicles to surmount the center island curb if necessary.

RESOURCES

Fargo-Moorhead Metrpolitan Council of Governments. 2012. **Metropolitan Profile 2012.** http://www.fmmetrocog.org/new/index.php?id=72. Accessed April 2, 2013.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

11. Broadway accommodates bicyclists and motorists in the same space. This is accomplished through signage and the fact that the road is designed for slow speeds.

12. In the residential section of 4th Street North, vehicular traffic decreases and sharrows become on-road signage communicating the road is shared space for vehicles and bicycles.

13. During maintenance along Broadway, efforts are made to keep the ground level so the sidewalk is still accessible.

14. In a more urban section of 4th Street North, travel lanes are clearly marked and bicycles are separated from the vehicle travel lanes.

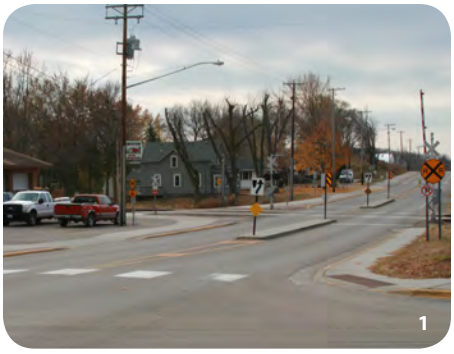
CASE STUDY 8

Hennepin County, Minnesota

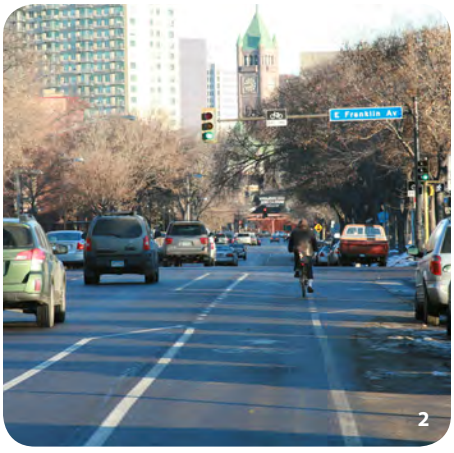
OVERVIEW

Hennepin County was the first county in Minnesota to adopt a complete streets policy in Minnesota and has made significant efforts in policy development, planning, and implementation of complete streets in urban, suburban, and exurban contexts. A number of county roads in a variety of communities (e.g., Minneapolis, Richfield, Loretto) have been redesigned to include elements of complete streets.

Hennepin County has made a concerted effort to ensure a complete streets approach is considered in transportation planning and project implementation with the development of the Complete Streets Project Summary and Checklist tools, and the Complete Streets Task Force. These initiatives encourage early and better communication and coordination across county departments and with external stakeholders, and they help ensure complete streets elements are considered at the beginning of project planning.



1. Pedestrian infrastructure improvements along County State Aid Highway 19 in Loretto, MN.



2. New buffered bike lanes along Park Avenue, County State Aid Highway 33, in Minneapolis, MN.

KEY FINDINGS

- » High level political leadership has been essential to garnering county-wide support of complete streets policies and project implementation.
- » Use of a Complete Streets Task Force, consisting of staff from multiple departments and key stakeholders, is important for consistent review and implementation of projects.
- » Active Living Hennepin County, and the County's focus on improving health, was a key initial driver of complete streets efforts, which helped engage a broad set of constituencies early in the planning process.

CONTEXT

Hennepin County is the most populous county in Minnesota, with roughly 1.15 million residents as of 2010 (US Census) and about a third of which live in Minnesota's largest city – Minneapolis. Covering a total of 554 square miles, the County is home to over half the residents of the Twin Cities metropolitan area and many of the largest employers in the region (Hennepin County). The county extends from urban core on its east side, through older post-WWII suburbs, through suburban and exurban communities to the west. The median household income is $61,238, just above the average for the state of Minnesota (US Census). A relatively large proportion of Hennepin County working residents travel to work by means other than the automobile; an estimated 7.8% take transit, 3.1% walk, and 1.5% bike according to the American Community Survey (2011), with most of these residents located in Minneapolis.

Community Stats

1,152,425 persons — population	554 sq. miles — total area
12.4 percent — commute by bike, walk, transit	49.9 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

DOCUMENTS

Complete Streets Policy

Approved in 2009, the Hennepin County Complete Streets Policy is a guiding document for county staff and elected commissioners. The Policy calls for the County to "enhance safety, mobility, accessibility and convenience for all corridor users including pedestrians, bicyclists, transit riders, motorists, commercial and emergency vehicles, and for people of all ages and abilities by planning, designing, operating, and maintaining a network of Complete Streets." The Policy makes a clear connection to "Active Living" – creating opportunities to integrate physical activity in day-to-day routines. Both staff and elected officials report that an important outcome of developing a complete streets policy is it has generated a sustained conversation about the connections among land use, transportation, and creating livable communities. Staff also notes the strength of the policy is its recognition that within a large county with many municipal governments, there are widely varied conditions that necessitate responsive and context-informed complete streets accommodations. Additionally, there are only a few reasons an exemption from complete streets would be granted.

Exemptions in the Hennepin County Complete Streets Policy

Hennepin County will implement Complete Streets unless one or more of the following conditions are documented:

- The cost of establishing Complete Street elements is excessive in relation to total project cost.
- The city council refuses municipal consent or there is a lack of community support.
- There are safety risks that cannot be overcome.
- The corridor has severe topographic, environmental, historic, or natural resource constraints.

The County Engineer will document all conditions that require an exception.

source: Hennepin County 2009

Complete Streets Checklist

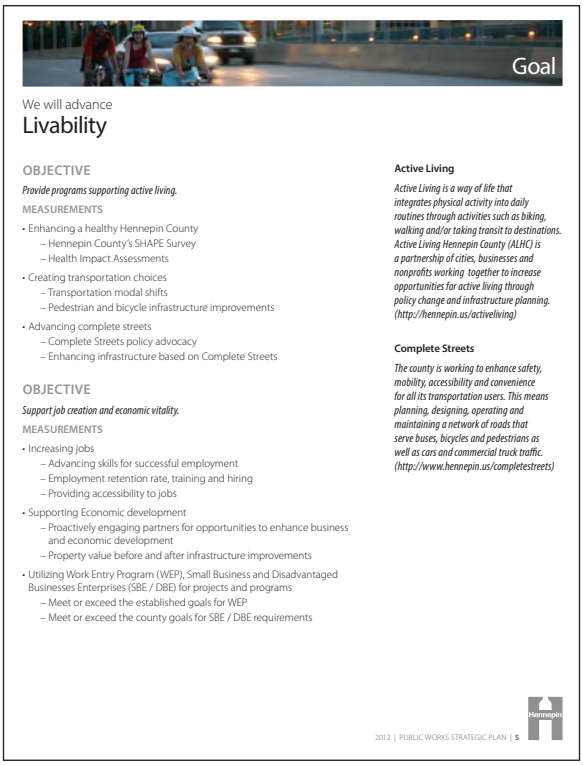
Shortly after Hennepin County adopted its policy in 2009, County staff developed a checklist as a means to evaluate county road projects and the possibilty of incorporating complete street elements. Developed initially in 2010 and then revamped in 2012, the Checklist is used to identify potential complete streets interventions as staff initiates the design phase of a reconstruction project. It asks for details related to existing and proposed roadway characteristics, including information on traffic counts (both bicycle and vehicular if available), corridor amenities such as transit stops, types of transit, Americans with Disabilities Act (ADA) accessibility, lighting, stormwater, intersection components, and types of signage.

Complete Streets Project Summary

Another tool County staff use in documenting complete streets is the Project Summary. This tool asks for existing and proposed corridor or intersection conditions, and also has a "Complete Streets Accomodation Metrics" section where complete streets specific questions are asked, such as if a bicycle gap was closed, miles of on- and off-road trails, and number of ADA compliant ramps.

Public Works Strategic Plan

Finalized in early 2013, the Hennepin County *Public Works Strategic Plan* lays out the vision and mission of Public Works, as well as specific goals, objectives, and measurements of success. The departments within Public Works were engaged in the drafting of the *Strategic Plan*, and all departments are intended to play an active role in working towards the County goals such as livability, environmental stewardship, and providing a seamless transportation network. Complete streets is mentioned as a key component of achieving the County's goal of "advancing livability.



Bicycle Transportation Plan

Hennepin County's *Bicycle Transportation Plan* was initially drafted in 1997, with reprints in 2000 and 2001. Drafted well before the complete streets movement, the document describes Hennepin County's commitment to bicycling as an important option for "commuting, utilitarian, and recreation trips" and recognizes the need to establish a "safe, convenient bicycle transportation system." The document provides a plan vision for bicycle transportation, and provides examples of the five levels of accommodation developed for Hennepin County road right-of-ways. It is illustrated with example street sections and provides guidance as it relates to policy development and funding.

PRACTICE

One of the key factors leading to Hennepin County's efforts around complete streets was the award of an Active Living Grant from Blue Cross and Blue Shield of Minnesota in 2006. The County was one of the first eight Minnesota communities to receive such an award. The intent of the award was to help the County "plan for and implement a comprehensive approach to support active living, with a focus on environmental and policy change efforts" (Active Living by Design). To advance this approach countywide, Hennepin County established the Active Living Hennepin County Partnership in 2006. The partnership remains in existence and includes representatives from cities, businesses, and non-profits with a mission to "increase opportunities for physical activity by reducing barriers to health in our built, natural, and social environment" (Hennepin County). Toward this end, Hennepin County developed a complete streets policy. The policy was drafted by County staff, with input from key stakeholders such as bicycle and pedestrian advocates and County Commissioners. The policy was unanimously adopted by the County Board in 2009.

Shortly after Hennepin County adopted its policy, County staff developed a Complete Streets Checklist as a way to evaluate projects and consider the application of complete streets elements in transportation projects. The Checklist requires staff to document both existing and proposed characteristics of the project corridor. In completing the Checklist, staff assess existing corridor characteristics such as such as annual average daily traffic (ADT) amounts, road classification, land use generators (e.g., school, church, retail), and bicycle counts. In addition, the checklist refers staff to city and county plans to determine whether the transportation corridor or project area is planned for a new bicycle or pedestrian route. Staff also document proposed characteristics of the corridor, noting what types of complete street elements will be incorporated such as sidewalks for pedestrians, on-street bike lanes, transit stops, and parking. The document concludes with a

"Funding is important... money behind a policy makes a difference. "

– –

"Engagement is paramount. Internal and external."

Hennepin County
Transportation Department
Public Works Facility
1600 Prairie Drive
Medina, MN 55340-5421

Checklist for Compliance with Hennepin County Complete Streets Policy

Click here to enter County Road Number (preface with CSAH or CR)

County Project #: Click here to enter Project #. Project Manager: Click here to enter Name.

City: Click here to enter City.

Project Limits: Click here to enter project limits description.

Project Funding Type: ☐ Federal Aid ☐ State Aid ☐ Local Funds ☐ Other Describe other.

Design Phase: ☐ Preliminary Design ☐ Detail Design

Completed By: Click here to enter Name. Date Completed: Click here to enter a date.

Existing Corridor Characteristics Review			
Average Daily Traffic (ADT):	Click here to enter ADT.	Posted Speed:	Select posted speed.
Critical crash rate history within the project corridor?	Yes or No	If yes, describe locations and note crash rates.	
Roadway Functional Class	Choose a functional class		
Road Use Classification	Choose an item.	Click here to add additional comments.	
Trip Generators: ☐ School ☐ Retail ☐ Hospital ☐ Fire station ☐ Park ☐ Church ☐ Airport ☐ Known Historic Site ☐ Sports facility ☐ Other Describe other.			
Existing corridor R/W width:	Click here to enter existing corridor R/W width or range of widths.		
Typical Roadway Section/Lane Configuration:	Describe here (# lanes & width, curb type, etc.)		
Intersection Configurations:	Describe here (traffic signals, geometry, side street stops, turn lanes, etc.)		
Side Street skewed <70° or existing sight distance issue	Identify the intersecting streets and specify the problematic leg.		
Any roadway or pedestrian (underpass/overpass) bridges?	Yes or No	If yes, list type, location, number, and over/under roadways.	
Any railroad crossings?	Yes or No If yes, describe.		
Complete Streets Features: ☐ Pedestrians List elements, i.e. sidewalk, trail, tunnel, etc. ☐ Bicycles List elements, i.e. bike lanes, trails, bike boxes, etc. ☐ Autos List elements, i.e. parking lanes, etc. ☐ Trucks List elements, i.e. no lane encroachment, etc. ☐ Buses List elements, i.e. bus stops, etc. ☐ Light rail List elements, i.e. LRT stops, etc. ☐ Other List other here.			
What is the average daily bicycle traffic?	Click here to enter bicycle traffic numbers and associated locations.		
On City/County Bike Plan?	Yes or No	If yes, indicate which plans.	

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Hennepin County
Transportation Department
Public Works Facility
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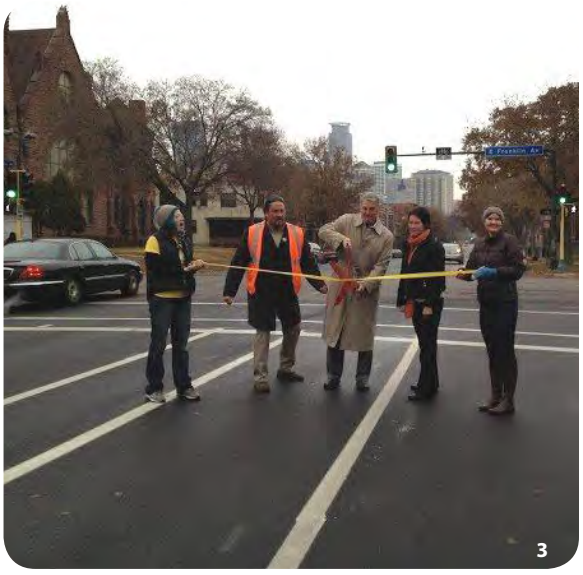
Medina, MN 55340-5421

Comparison Summary of Pedestrian/Bicycle Improvements		
Miles of sidewalk	Existing: Number	Proposed: Number
Miles of trails or bike lanes	Existing: Number	Proposed: Number
Number of striped crosswalks	Existing: Number	Proposed: Number
Number of ADA compliant ramps (Note: Each crossing counts as 1 ramp; 2-way directional and diagonal ramps count as 2 ramps)	Existing: Number	Proposed: Number
Number of pedestrian bump-outs	Existing: Number	Proposed: Number
Number of signals with countdown timers	Existing: Number	Proposed: Number
Miles of pedestrian lighting	Existing: Number	Proposed: Number



3. Ribbon cutting ceremony celebrating the reconfiguration of Park and Portland Avenues in Minneapolis. Buffered bike lanes were included in the restriping of this mill and overlay road maintenance project.

summary comparison of bike and pedestrian improvements where staff complete a chart to quickly compare existing and proposed mileage of sidewalk, trails and bike lanes, and the number of ADA compliant ramps, pedestrian lighting elements, and signals with countdown timers (see example pages at left).

Staff, elected officials, and advocates all report that there was a time just after the policy was adopted when it was unclear as to how to proceed in project implementation. To increase the momentum and energy around complete streets, the County formed a Complete Streets Task Force. The Task Force meets quarterly and was established to "review and recommend the most effective use of funding steams available for complete streets, develop consistent implementation principles, practices and guidelines, and identify demonstration projects for Hennepin County's Complete Streets policy. . ." (Hennepin County 2011).

Hennepin County Complete Streets Task Force Membership

1. The chair of Hennepin County's Health and Human Services Committee
2. The chair of Hennepin County's Public Works, Energy and Environment Committee
3. The chair of Hennepin County's Budget and Capital Investment Committee
4. The Assistant Administrator for Public Works
5. Three elected officials, one of whom represents an Active Living Hennepin County partner city
6. A representative from both the Metropolitan Council and MnDOT
7. Two business representatives appointed by the chair(s)
8. At least one individual representing each of the following categories:
    - A) Schools
    - B) Seniors
    - C) Persons with disabilities
    - D) Hennepin County Bicycle Advisory Committee
    - E) Other residents or constituents

source: Hennepin County Complete Streets Webpage

Elements of the County's Complete Streets Policy have been further institutionalized in other documents that guide the planning and review of projects. For example, the Transportation Planning Division scores proposed projects slated to be part of the five-year Capital Improvement Program (CIP), using criteria including safety, pavement condition, road capacity, and complete streets. The scoring process is not the only prioritization for projects as the Division considers CIP projects, but it does illustrate one way complete streets consideration has been formalized in the planning process.

It was reported by both internal and external sources that County staff have experienced an increase in communication and coordination across departments since the implementation of the Complete Streets Policy. Additionally, Hennepin County Public Works is going through some internal changes, and a number of interviewees reported that the changes are anticipated to aid in the implementation of complete streets. A newly formed Strategic Planning and Resources Department is expected to improve internal and external communication and coordination among departments, including Transportation, Housing, Community Works and Transit, and Environmental Services. The new department is also anticipated to formalize Hennepin County's outreach efforts, including coordination with other agencies and stakeholders. Staff expect that these changes will improve both communication and broader project coordination.

Hennepin County pursues complete streets project implementation in a variety of contexts from urban to suburban and exurban. Park Avenue and Portland Avenue in Minneapolis are examples of how the County incorporated improved bike lanes into pavement maintenance projects. Park and Portland Avenues in the City of Minneapolis were one-way, three lane arterial county streets used most often as key access routes into and out of the City. Posted at 35 miles per hour, traffic speeds were well above 35 miles per hour. Bike lanes did exist prior to the restriping, though the bike lanes were on the left where bicyclists were next to the fastest lane of traffic. Slated for mill and overlay work in the summer of 2012, some County commissioners, County staff, City staff, and advocates saw it as an opportunity to consider a new striping plan for the corridor. The proposal was to reduce the number of traffic lanes and incorporate better bike lanes on Park Avenue and Portland Avenue, from Washington Avenue to East 46th Street. There was extensive coordination between the City and County during the entire process. The City of Minneapolis Bicycle and Pedestrian Coordinator was engaged to review designs and offer guidance as County staff developed its restriping plan for the corridors. The public was also engaged early in the process through a number of County/City jointly-sponsored community meetings. Both segments of Park Avenue and Portland Avenue now have two vehicle travel lanes instead of three, and provide a wider buffered bike lane on the right side of the street. Recently, the County Board approved a reduction in the speed limit to 30 miles per hour on both streets. The avenues remain one-way corridors, but now accommodate vehicular and on-road bicycle traffic in a safer way.

"In 2011 the Public Works Department made a presentation of anticipated mill and overlay projects to the bicycle advisory committee. That is the first time that type of coordination has happened and I anticipate that will continue. It is encouraging."

4. Park and Portland Avenues in Minneapolis feature new buffered bike lanes. Buffers are incorporated on both sides of the bike lane putting cyclists in a safer zone from moving cars, or opening car doors. The buffers are indicated by pavement striping and signage at intersections.

"At the end of the day, it is important for the policy to allow for conversations. The Hennepin County policy encourages conversations internally, with elected officials, staff, and local partners and that important."

As another example, County State Aid Highway (CSAH) 101 in the City of Minnetonka is currently in the design phase and County staff has incorporated improved pedestrian and bicycling infrastructure in the initial concepts of this high traffic, suburban and exurban corridor. Staff mentioned that a number of years ago, pedestrian and cycling infrastructure elements would typically not be incorporated unless community members asked specifically for them. In this process, the bicycle and pedestrian elements would often be added after initial designs were drafted if financial resources existed. Now bicycle and pedestrian amenities are often part of initial concepts and reviewed with community members for feedback and suggestions for changes.

5

5. This section of Medicine Lake Road was recently converted from four vehicular travel lanes to two lanes and a shared center turn lane. This conversion allowed for the inclusion of bike landes along this county road.

6

7

6-7. Along the Medicine Lake Road corridor a number of pedestrian and bicyclist focused improvements have been made including new sidewalks, ADA compliant ramps, contential crosswalk striping, and new bike lanes.

RESOURCES

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Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

8-9. Improvements to CSAH 19 in Loretto include landscaping, wide sidewalks, ADA compliant ramps, brick pavers emphasizing the separation pedestiran and vehicular realms.

10-12. CSAH 19 near Loretto includes a multiuse trail along the east side of the highway. This trail features visible crossings at key intersections and separates bikes and pedestrians from the vehicle travel lanes where the speed limit is 55 miles per hour.

CASE STUDY 9

Madison, Wisconsin

OVERVIEW

The City of Madison, Wisconsin, is a valuable example of a community that has been implementing innovative non-motorized transportation infrastructure investments for years prior to the complete streets movement. Since 2006 it has been recognized as a Bicycle Friendly Community by the League of American Bicyclists. The City hired its current bicycle and pedestrian coordinator 25 years ago, and its first bike plan was drafted nearly ten years prior to that, at a time when many communities were focusing on accommodating motorized traffic. The well-established culture of bicycling and walking in Madison has allowed the City to implement and test various types of street design innovations, such as bike boulevards and pedestrian activated crossings.

1. A new buffered bike lane along Segoe Road in Madison.

2. Signage reinforces the message that turning vehicles are to yield to pedestrians in crosswalk.

KEY FINDINGS

- The City's well-established bicycle and pedestrian infrastructure has been years in the making, drawing on a long history of providing City staff and planning support.
- Strong local political support and consistent staff are critical to achieving innovation and a long-term view.
- The State of Wisconsin's complete streets policy positively impacts the design and implementation of state and federally funded roads in the Madison area, and is complementary to how the City of Madison plans and implements its infrastructure.
- The City drafted its complete streets resolution to say it "reaffirms its commitment" to complete streets, acknowledging the strength of previous multi-modal planning efforts and its strong existing base of pedestrian and bicycling policy.

CONTEXT

The City of Madison has a population of 233,209 according to the most recent US Census. It is the second largest city in the state and is located in one of the state's fastest growing regions (Madison Region Thrive Here). Madison serves as Wisconsin's capitol city and is home to the largest University of Wisconsin campus with approximately 42,000 students and 18,000 employees (University of Wisconsin). According to the American Community Survey, an estimated 9.2% percent of Madison's working population walks to work, 5.2% percent bike to work, and 8.7% take transit to work, well above the national averages (2.8%, 0.5%, and 5.0%, respectively).

Community Stats

233,209 persons — population	77 sq. miles — total area
23.1 percent — commute by bike, walk, transit	44.1 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

DOCUMENTS

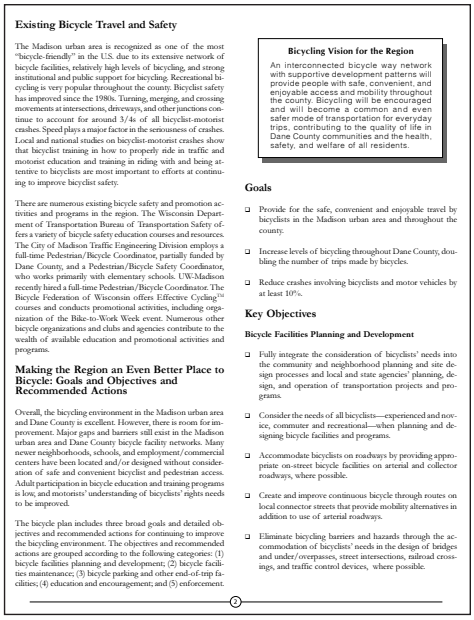
Complete Streets Resolution

The City of Madison approved its *Complete Streets Resolution* in 2009. The *Resolution* is an affirmation of its long-standing commitment to multi-modal efforts in its transportation planning and implementation. During the Council meeting when the *Resolution* was approved, staff noted,

> "The City had many existing policies that were Complete Street policies, though they weren't always identified as such. The Comprehensive Plan, the Bicycle Transportation Plan, the Pedestrian Transportation Plan and most of the neighborhood plans (among others) all related to Complete Streets without specifically using that terminology. Complete Streets was not a new policy for the City: standard designs for arterial streets included bike lanes and sidewalks; federal funding was heavily based on multi-modalism; neighborhood plans talked about walkability and bikeablity; and Complete Street concepts were deeply embedded in the Comprehensive Plan. During discussion, Schmidt said that the Zoning Code Rewrite Advisory Committee planned to include language related to Complete Streets" (City of Madison, 2009).

Bicycle Transportation Plan: Madison Urban Area and Dane County

Adopted in 2000 by the Madison Area Planning Organization, the *Bicycle Transportation Plan* is a guiding document for the City and Dane County as it considers bicycle infrastructure. Covering everything from safety to education, key goals and objectives are described in detail in the document's chapter format (see image to the right). City staff reference it for multi-modal planning in the Madison area.



Existing Bicycle Travel and Safety

The Madison urban area is recognized as one of the most "bicycle-friendly" in the U.S. due to its extensive network of bicycle facilities, relatively high levels of bicycling, and strong institutional and public support for bicycling. Recreational bicycling is very popular throughout the county. Bicyclist safety has improved since the 1980s. Turning, merging, and crossing movements at intersections, driveways, and other junctions continue to account for around 3/4s of all bicyclist-motorist crashes. Speed plays a major factor in the seriousness of crashes. Local and national studies on bicyclist-motorist crashes show that bicyclist training in how to properly ride in traffic and motorist education and training in riding with and being attentive to bicyclists are most important to efforts at continuing to improve bicyclist safety.

There are numerous existing bicycle safety and promotion activities and programs in the region. The Wisconsin Department of Transportation Bureau of Transportation Safety offers a variety of bicycle safety education courses and resources. The City of Madison Traffic Engineering Division employs a full-time Pedestrian/Bicycle Coordinator, partially funded by Dane County, and a Pedestrian/Bicycle Safety Coordinator, who works primarily with elementary schools. UW-Madison recently hired a full-time Pedestrian/Bicycle Coordinator. The Bicycle Federation of Wisconsin offers Effective Cycling[tm] courses and conducts promotional activities, including organization of the Bike-to-Work Week event. Numerous other bicycle organizations and clubs and agencies contribute to the wealth of available education and promotional activities and programs.

Making the Region an Even Better Place to Bicycle: Goals and Objectives and Recommended Actions

Overall, the bicycling environment in the Madison urban area and Dane County is excellent. However, there is room for improvement. Major gaps and barriers still exist in the Madison urban area and Dane County bicycle facility networks. Many newer neighborhoods, schools, and employment/commercial centers have been located and/or designed without consideration of safe and convenient bicyclist and pedestrian access. Adult participation in bicycle education and training programs is low, and motorists' understanding of bicyclists' rights needs to be improved.

The bicycle plan includes three broad goals and detailed objectives and recommended actions for continuing to improve the bicycling environment. The objectives and recommended actions are grouped according to the following categories: (1) bicycle facilities planning and development; (2) bicycle facilities maintenance; (3) bicycle parking and other end-of-trip facilities; (4) education and encouragement; and (5) enforcement.

Bicycling Vision for the Region

An interconnected bicycle way network with supportive development patterns will provide people with safe, convenient, and enjoyable access and mobility throughout the county. Bicycling will be encouraged and will become a common and even safer mode of transportation for everyday trips, contributing to the quality of life in Dane County communities and the health, safety, and welfare of all residents.

Goals

- Provide for the safe, convenient and enjoyable travel by bicyclists in the Madison urban area and throughout the county.
- Increase levels of bicycling throughout Dane County, doubling the number of trips made by bicyles.
- Reduce crashes involving bicyclists and motor vehicles by at least 10%.

Key Objectives

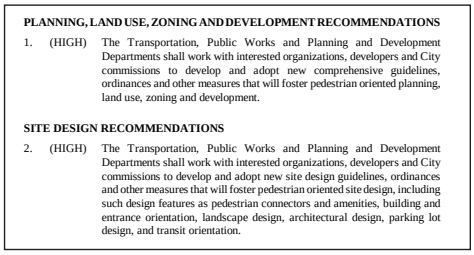
Bicycle Facilities Planning and Development

- Fully integrate the consideration of bicyclists' needs into the community and neighborhood planning and site design processes and local and state agencies' planning, designs, and operation of transportation projects and programs.
- Consider the needs of all bicyclists—experienced and novice, commuter and recreational—when planning and designing bicycle facilities and programs.
- Accommodate bicyclists on roadways by providing appropriate on-street bicycle facilities on arterial and collector roadways, where possible.
- Create and improve continuous bicycle through routes on local connector streets that provide mobility alternatives in addition to use of arterial roadways.
- Eliminate bicycling barriers and hazards through the accommodation of bicyclists' needs in the design of bridges and under/overpasses, street intersections, railroad crossings, and traffic control devices, where possible.

The Bicycle Transportation Plan clearly identifies goals, objectives and recommended actions.

Pedestrian Transportation Plan for the City of Madison

Adopted by the City of Madison in 1997, the *Pedestrian Transportation Plan* articulates the City's approach to pedestrian planning as one that will encourage sound land use and transportation decisions and practices to encourage walking in the City. It sets forth prioritized action items (high, medium, low, or continue current practice) in categories such as installation, design, maintenance. It is a key document in multi-modal planning in Madison, and City staff considers the plan a critical guiding document relative to complete streets planning and implementation.



PLANNING, LAND USE, ZONING AND DEVELOPMENT RECOMMENDATIONS

1. (HIGH) The Transportation, Public Works and Planning and Development Departments shall work with interested organizations, developers and City commissions to develop and adopt new comprehensive guidelines, ordinances and other measures that will foster pedestrian oriented planning, land use, zoning and development.

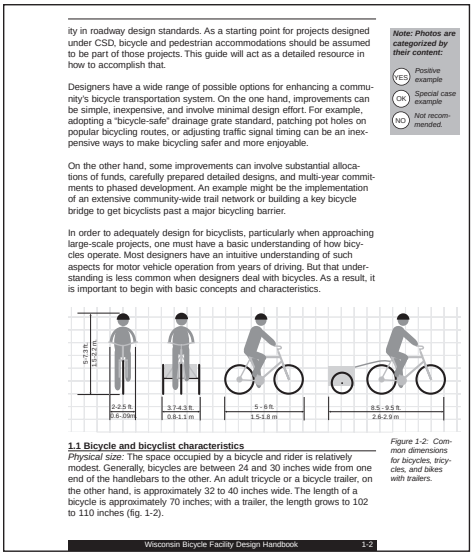
SITE DESIGN RECOMMENDATIONS

2. (HIGH) The Transportation, Public Works and Planning and Development Departments shall work with interested organizations, developers and City commissions to develop and adopt new site design guidelines, ordinances and other measures that will foster pedestrian oriented site design, including such design features as pedestrian connectors and amenities, building and entrance orientation, landscape design, architectural design, parking lot design, and transit orientation.

The Pedestrian Transportation Plan contains prioritized actions relative to pedestrian planning, design, and implementation.

Wisconsin Bicycle Facility Design Handbook 2004

Developed in 2004 and revised in 2006 and 2009, the *Bicycle Facility Design Handbook*, authored by the Wisconsin Department of Transportation (WisDOT), is an important reference guide for staff working on bicycle infrastructure in the City of Madison. It is a well-illustrated manual that provides both basic and detailed information on everything from typical dimensions of a person on bike to detailed design guidance on important aspects such as intersections, pavement markings, bikeable storm sewer grates and gutters, and cross sections, and pavement types.



ity in roadway design standards. As a starting point for projects designed under CSD, bicycle and pedestrian accommodations should be assumed to be part of those projects. This guide will act as a detailed resource in how to accomplish that.

Designers have a wide range of possible options for enhancing a community's bicycle transportation system. On the one hand, improvements can be simple, inexpensive, and involve minimal design effort. For example, adopting a "bicycle-safe" drainage grate standard, patching pot holes on popular bicycling routes, or adjusting traffic signal timing can be an inexpensive ways to make bicycling safer and more enjoyable.

On the other hand, some improvements can involve substantial allocations of funds, carefully prepared detailed designs, and multi-year commitments to phased development. An example might be the implementation of an extensive community-wide trail network or building a key bicycle bridge to get bicyclists past a major bicycling barrier.

In order to adequately design for bicyclists, particularly when approaching large-scale projects, one must have a basic understanding of how bicycles operate. Most designers have an intuitive understanding of such aspects for motor vehicle operation from years of driving. But that understanding is less common when designers deal with bicycles. As a result, it is important to begin with basic concepts and characteristics.

Note: Photos are categorized by their content:
YES Positive example
OK Special case example
NO Not recommended.

1.1 Bicycle and bicyclist characteristics

Physical size: The space occupied by a bicycle and rider is relatively modest. Generally, bicycles are between 24 and 30 inches wide from one end of the handlebars to the other. An adult tricycle or a bicycle trailer, on the other hand, is approximately 32 to 40 inches wide. The length of a bicycle is approximately 70 inches; with a trailer, the length grows to 102 to 110 inches (fig. 1-2).

Figure 1-2: Common dimensions for bicycles, tricycles, and bikes with trailers.

Wisconsin Bicycle Facility Design Handbook 1-2

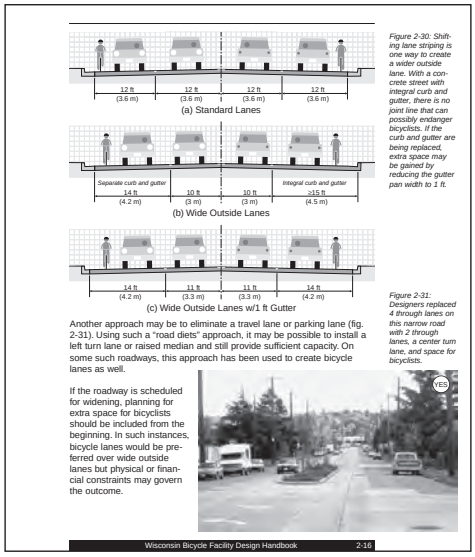


Figure 2-30: Shifting lane striping is one way to create a wider outside lane. With a concrete street with integral curb and gutter, there is no joint line that can possibly endanger bicyclists. If the curb and gutter are being replaced, extra space may be gained by reducing the gutter pan width to 1 ft.

Another approach may be to eliminate a travel lane or parking lane (fig. 2-31). Using such a "road diets" approach, it may be possible to install a left turn lane or raised median and still provide sufficient capacity. On some such roadways, this approach has been used to create bicycle lanes as well.

If the roadway is scheduled for widening, planning for extra space for bicyclists should be included from the beginning. In such instances, bicycle lanes would be preferred over wide outside lanes but physical or financial constraints may govern the outcome.

Figure 2-31: Designers replaced 4 through lanes on this narrow road with 2 through lanes, a center turn lane, and space for bicyclists.

Wisconsin Bicycle Facility Design Handbook 2-16

The Wisconsin Department of Transportation *Bicycle Facility Design Handbook* is referenced for bicycle infrastructure elements such as signage, lane striping, and lane widths.

> ***"The state law and subsequent work WisDOT has done to formalize the [complete streets] process are helping to shift the mindset from one that views complete streets elements as 'add-ons' to one that is 'this is the way we do business.'"***

PRACTICE

The City of Madison's City Engineering and Traffic Engineering Departments have been working to establish citywide bicycle and pedestrian infrastructure as well as vehicular infrastructure for many years. City Engineering is primarily responsible for large-scale infrastructure projects and develops designs and construction documents associated with larger public works implementation projects. Traffic Engineering is focused on developing overall plans for the various modes, and providing recommendations for all signage and signals. Also, the City's Planning and Parks Departments are engaged in coordinating planning and maintenance and developing standards for new neighborhood developments.

Hired twenty five years ago as staff in the Traffic Engineering Department, the City's current Bicycle and Pedestrian Coordinator provides an important perspective as the City considers expands or addresses its already established street network. The Coordinator is responsible for reviewing City Engineering projects and making recommendations related to the bicycle and pedestrian realm, developing and implementing all system improvements not developed by City Engineering, responding to requests from residents and business owners, and serving as a community resource on bicycle and pedestrian issues. This position has been an integral part of transportation planning and implementation in Madison for over two decades, and is one reason the bicycle and pedestrian infrastructure are visibly well established in many areas of the City.

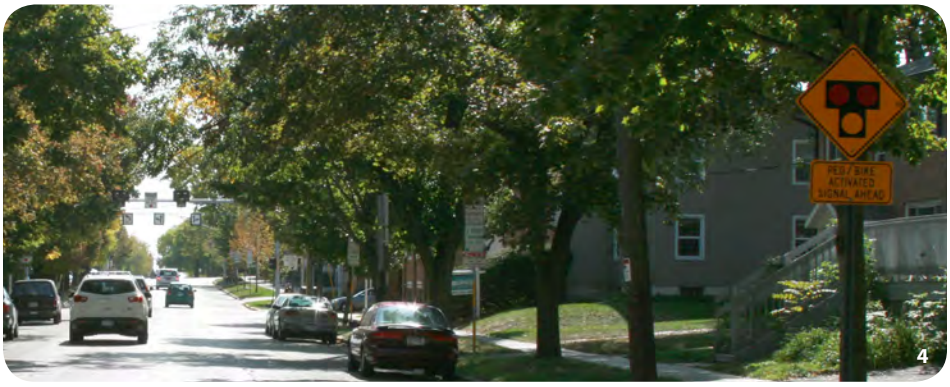
Community and political support for walking and biking have been integral as Madison works to to establish its multi-modal infrastructure. Thirty years ago, sidewalks were not a common part of proposed developments, but as the city continued to develop, infrastructure disconnects such

3. In high traffic pedestrian areas near the University of Wisconsin Madison, increased signage is used to remind drivers to yield to pedestrians.

"People started to see there was clearly a community benefit to sidewalks, and the public good is more important than one resident's inconvenience."

as abrupt sidewalk endings were apparent and frustrating to many residents. The disconnected nature of the pedestrian infrastructure was often due to a few residents complaining about the cost or maintenance. But as demand for sidewalks grew, alders became more and more supportive. Now sidewalks are standard for new developments, and the city is working to retrofit some developments to incorporate sidewalks.

In addition to local leadership on bicycle and pedestrian facilities, City staff reference national design guidelines in the implementation of its bicycling and pedestrian infrastructure. The American Association of State Highway and Transportation Officials (AASHTO) and the National Association of City Transportation Officials (NACTO) guides are frequently referenced for things like lane widths and signage. The WisDOT *Bicycle Facility Design Handbook* is also a frequently used guidebook for design of bicycle infrastructure. One unique aspect of implementation in Madison is the use of a very humanized symbol to denote bicycle infrastructure. Rather than the standard icon, the graphic looks like a person in helmet, often with a child in tow on a trailer bike. These icons were modeled after icons in Boulder, Colorado, and are used by WisDOT and the City. It is a great way to subtly communicate the importance of being aware of bicyclists and youth that use the City streets. The City has also implemented highly visible pedestrian crossings like pedestrian activated crosswalks, pedestrian islands, raised pedestrian crossings, and the use of continental striping which is more visible to vehicular traffic than traditional crosswalks.



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4-5. At the intersection of Mifflin Street and Blair Street, the City installed a modified HAWK (high-intensity activated crosswalk beacon). When the signal is activated, vehicular traffic stops and pedestrians and bicyclists have the right of way to cross Blair Street, which also serves as US Highway 151.

6

6. Typical bike lane signage incorporates a more humanized graphic, the rider looks like a child with a helmet.

7

7. Continental striping is becoming the standard crosswalk striping in Madison. The wide crosswalk accomodates both bicyclist and pedestrians and is highly visible at this busy intersection along Williamson Street.

As well as its focus on infrastructure, the City of Madison has also pursued a recent safety and awareness campaign called the Pedestrian and Bicycle Ambassador program. With oversight by a police lieutenant, the program is part of what the City calls the Three E's model to encourage safe bicycling, walking, and driving and to reduce conflicts. The three E's are: Engineering, Education, and Enforcement. Engineering is developing safe infrastructure for all modes of transportation; Education is educating all modes on the rules of the road as it relates to all modes; and Enforcement is focused on regulating how people use roads. The Pedestrian and Bicycle Ambassador Program focuses primarily on education, teaching users of all modes about proper use of the roads. Ambassadors are temporary, paid positions, employed by the City during the summer and fall months.

8

9


10

8-10. Kendall Avenue Bike Boulevard accomodates bikes in both directions, and one-way vehicular traffic. It is well marked and designed for slow vehicle speeds.

Transit also plays a role in establishing Madison as a multi-modal community. The City of Madison's Metro Transit system provides service to residential neighborhoods, schools, the University, and neighboring communities of Middleton, Fitchburg, Verona, and the Town of Madison. In effort to serve the younger population in the region, Metro Transit stops near middle schools and high schools in the region. This expansion of service is an important and well-used service by younger residents in the area.

Acknowledging Madison's long history in advancing multi-modal considerations in transportation, the City has made a deliberate decision to not establish a complete streets policy. Staff have specifically noted that it is possible to create complete streets without a complete streets policy. The City's existing plans and policies have been deemed sufficient to continue planning and building a multi-modal transportation system. While the City has not established a policy, in 2009 it passed a complete streets resolution, offering explicit recognition of the complete streets term and the City's role in advancing complete streets through its past, current, and future transportation planning efforts.

"We're changing culture through the 3Es model [engineering, education, enforcement]. All Es work together to reduce conflict, change culture, and increase respect for the rules of the road."


11


12

11-12. At some intersections, pedestrians can use a flag to increase their visibility. The pedestrian takes a flag from one side of the street, holds it in a visible position when crossing, and deposits it in the place provided on the other side of the street.

ADDITIONAL PROJECT PHOTOS

13. State Street, in the heart of Madison, is a car-free pedestrian mall with many shops and restaurants. Extending from the Capitol to the University of Wisconsin, it accomodates pedestrians bicyclists, buses and emergency vehicles.

14-15. ADA compliant ramps along State Street are designed to be visually interesting as well as functional.

16-17. Sidewalks on State Street have ample room to accomodate wheelchairs, pedestrians, outdoor cafes, transit stations, and bike parking.

18. At the intersection of Mifflin Street and Blair Street the City implemented a pedestrian and bicycle activated signal, where when bicyclists and pedestrians are present they have priority to cross Blair Street which also serves as US Highway 151.

19-20. Signage at the intersection of Mifflin Street and Blair Street communicates where and how cyclists should navigate the intersection.

21-22. Along Schroeder Road in suburban Madison, the City has improved the pedestrian and bicycling infrastructure through signage, median refuges, and wide bike lanes.

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Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

23. The City of Madison has a rideshare program with stations found throughout the core of downtown.

24. Along Williamson there is an on-road bike lane as well as a wide multi-use trail which allows bicyclists to bike where they are comfortable.

25. The crosswalk at the intersection of Williamson Street and Blount Street is a widened crossing with ample signage.

CASE STUDY 10

New Haven, Connecticut

OVERVIEW

The City of New Haven is emerging as a leader in community-based efforts to pursue complete streets. With City government leadership through the *Complete Streets Design Manual*, and strong advocacy from community and neighborhood organizations, New Haven now has dozens of examples of complete streets projects in a variety of contexts. The *Manual* was developed in response to traffic safety concerns, with strong advocacy from key elected officials. A cross-departmental and stakeholder driven process was used to develop the *Manual*, which is now codified in City ordinance with complete streets elements integrated into work programs and budgets. A key component of the *Complete Streets Design Manual* is the Complete Streets Project Request Form. The form can be used by residents, local advocates, and elected officials to submit and justify requests for complete streets projects.

1. Mid-block crossing on Broadway near Yale University.

KEY FINDINGS

- The City's Complete Streets Project Request Form and online SeeClickFix program provides a means of responding to the interests of the extensive system of neighborhood organizations and community advocates.
- Broad-based engagement from multiple departments and representing key advocates was important to producing a legitimate and usable Complete Streets Design Manual.
- Understanding human behavior is critical to designing safe transportation systems, and utilizing safety promotion and education programs can be complementary to complete streets efforts.

CONTEXT

New Haven's population is at just under 130,000 according to the most recent U.S. Census and the City is situated in broader metropolitan area of nearly 850,000. The City has a relatively diverse population, a high poverty rate of over 25%, and low household income (U.S. Census). The City is home to Yale University, which enrolls over 11,000 students and employs over 9,000 staff (Yale University). It is home to a number of large employers as well, making it a regional job base. The city has a strong public transit system, with regional and local connections. Approximately 28.5% of the working population travels to work via transit, walking, or biking according to the American Community Survey (2011). As an older city, the street system largely follows a grid pattern laid out prior to the introduction of the automobile. The City government utilizes an interactive web-based program called SeeClickFix to elicit public identification and feedback on community concerns related to infrastructure, safety, crime, and other issues. The program has been helpful in identifying areas of key concern for transportation safety and facility improvements.

Community Stats

129,585 persons — population	19 sq. miles — total area
28.5 percent — commute by bike, walk, transit	26.2 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

Guiding Principles for New Haven Complete Streets

1. Safety and slow vehicle speeds – promote safety for all users, limit vehicle speeds, reduce injuries and fatalities
2. Connectivity – satisfy travel needs with redundant routes in an intact network system
3. Human health – design for active transportation and to decrease air pollution and particulate levels caused by motor vehicles
4. Livability – design public spaces (streets) to enhance quality of life, strengthen community ties, encourage civic engagement, and promote health
5. Context – respect and enhance the distinctive identity of the city, its urban character, and its cultural/historical context
6. Equity – design streets to provide for the needs and safety of all users, particularly people with disabilities, the elderly, children, and people who cannot afford a private vehicle
7. Aesthetics – make the street a place where people want to be by using aesthetic elements such as materials, lighting, landscaping, street furniture, and maintenance
8. Economic development – design streets to support current and future development and contribute to the city's economic vibrancy
9. Environment – support and encourage non-motorized transport to decrease vehicle miles traveled, leading to reductions in air pollution and carbon emissions and better management of stormwater

source: City of New Haven Complete Streets Design Manual

DOCUMENTS

Complete Streets Design Manual

Approved in 2010, the *Complete Streets Design Manual* specifies the following policy: "The City of New Haven shall require the accommodation of the safety and convenience of all users of the transportation system using a hierarchy of users which supports and encourages non-motorized transportation and prioritizes the needs of the most vulnerable users: children, the elderly and persons with disabilities." The *Manual* applies to public streets and sidewalks, whether new or improved. It serves as a resource document describing complete streets concepts, but also includes design details and a decision matrix that specifies when various complete streets techniques might be used.

Complete Streets Request Form

Included as an appendix in the *Complete Streets Design Manual*, the two-page request form provides an opportunity for the public to request a complete streets project. The *Request Form* asks for basic project information including the location, impetus, goals, and context (i.e., adjacent land uses, neighborhood character, existing transportation system). Project proposers must provide a brief description of how the project relates to each of the nine guiding principles (e.g., connectivity, human health, equity, economic development) in the *Complete Streets Design Manual.*

2. Audubon Avenue is a "woonerf" street, allowing automobile traffic but prioritizing the pedestrian.

Bicycle Plan

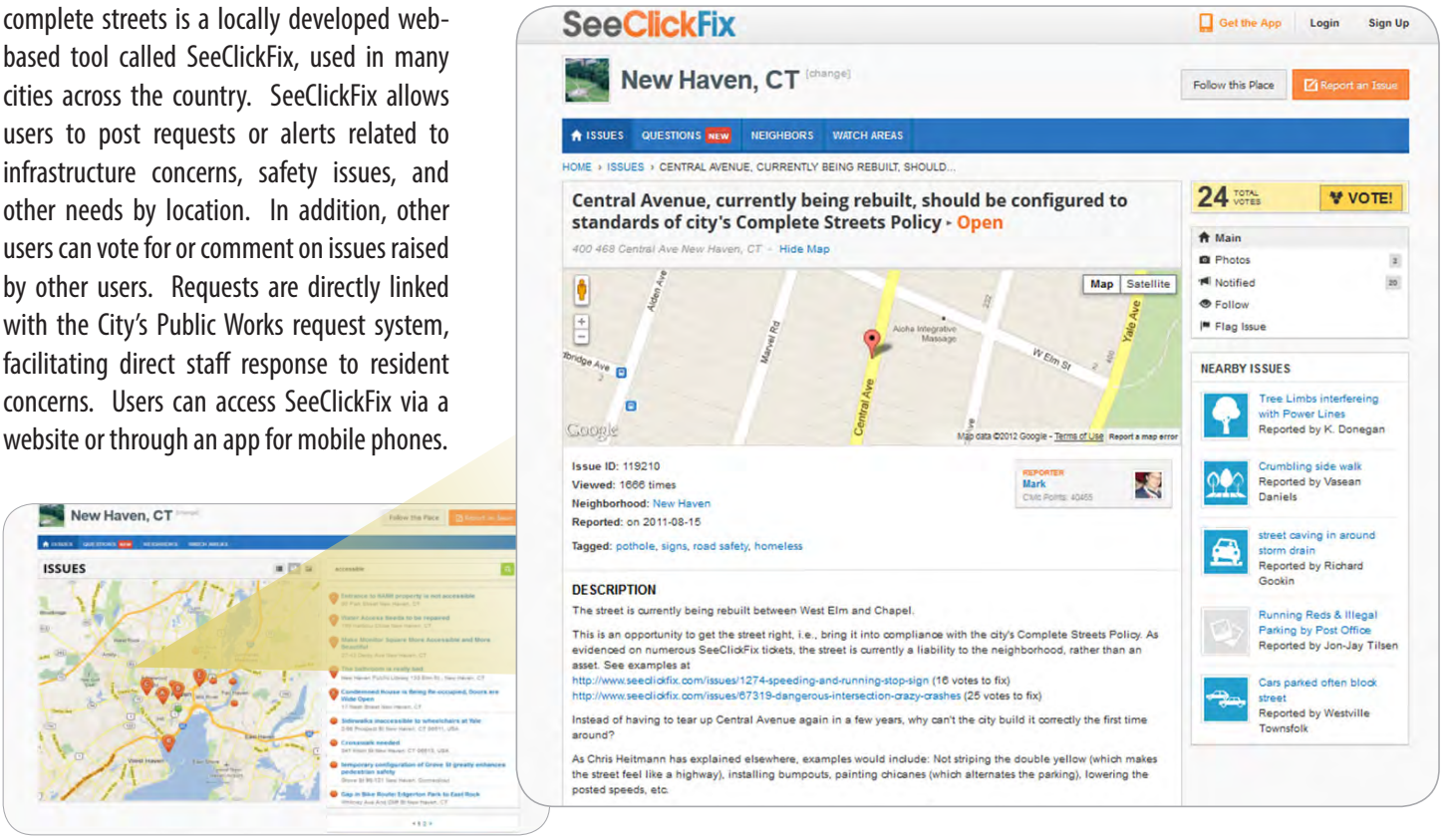
The *Bicycle Plan* was prepared by Elm City Cycling, a local bicycle advocacy group with 400 members. It was submitted to the City staff and a link to the *Plan* is posted on the City's website, but is not an official City document. The *Plan* encourages the City of New Haven to continue its efforts to enhance bicycle infrastructure and its cover letter states, to help the City "prioritize and budget for continued improvements to New Haven's bicycle network and infrastructure over the coming year." The *Plan* specifies new and improved routes, signage, parking, public education, and evaluation projects and policies.

PRACTICE

Galvanized by two high profile pedestrian fatalities in the community, a local elected alderperson is widely recognized as the key individual who initiated complete streets in New Haven. The alderperson and the broader Safe Streets Coalition group proposed the formation of a Complete Streets Steering Committee that would develop a complete streets policy for the City. The committee was formed, consisting of three alderpersons, three City staff (engineering, planning, transportation), and three residents. They worked for approximately two years to develop the Complete Streets Design Manual. The City Engineer was intentionally designated as the facilitator, with intent of ensuring that he was fully engaged in the process, as the engineering department would play a key role in implementation. The elected officials and residents served as key resources in bringing in information related to complete streets practices. Also, local advocates pursued funding for a national level consultant to offer a community-specific assessment of needs and opportunities.

> ***"Give [engineers and public works staff] a stake in it, otherwise every project will be a battle and they'll usually win."***

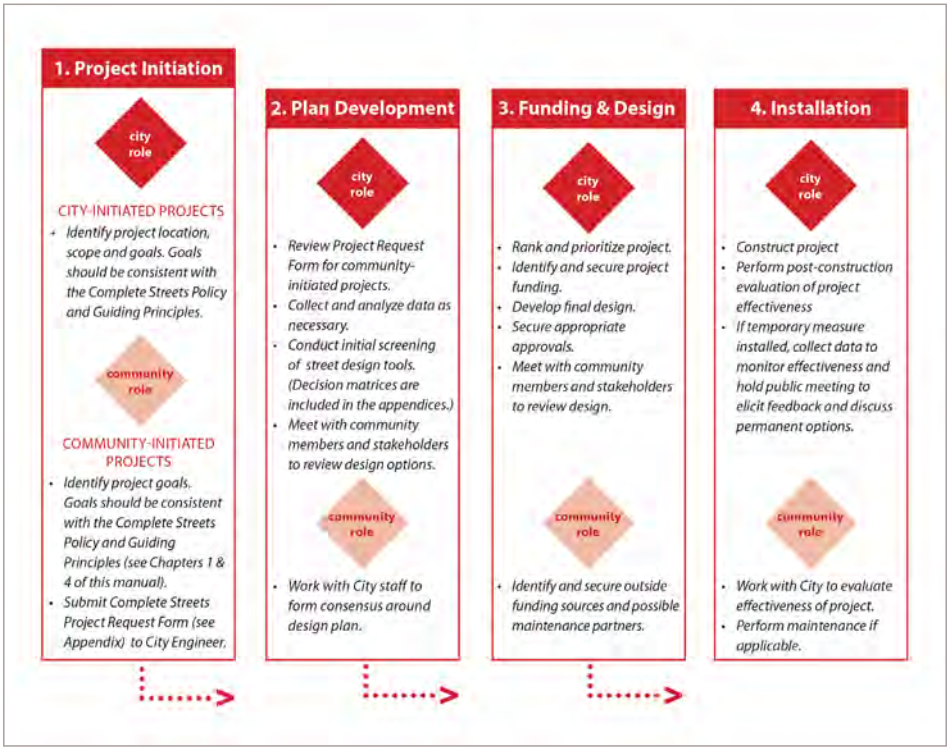
The *Complete Streets Design Manual* was developed with to formalize "a process for community participation in the street re-design process" and develop "a protocol for constructive engagement between community members and city staff." The plan outlines nine guiding principles, highlighted in the side bar on page 2. The *Complete Streets Request Form*, adopted as part of the *Manual* offers a formalized approach to responding to community interest in complete streets projects. Submitted forms are posted on the City's website and efforts are underway to provide more real-time tracking of project status. Another tool that has emerged as useful in identifying community interests and needs relative to complete streets is a locally developed web-based tool called SeeClickFix, used in many cities across the country. SeeClickFix allows users to post requests or alerts related to infrastructure concerns, safety issues, and other needs by location. In addition, other users can vote for or comment on issues raised by other users. Requests are directly linked with the City's Public Works request system, facilitating direct staff response to resident concerns. Users can access SeeClickFix via a website or through an app for mobile phones.



Screen shots of SeeClickFix website shows resident-identified issues, comments by other users, vote tallies, and an interactive map of identified issues. (source: SeeClickFix New Haven)

"[The Complete Streets Request Form] creates some normal process by which we can be a little more data driven in how we respond to requests and manage workflow."

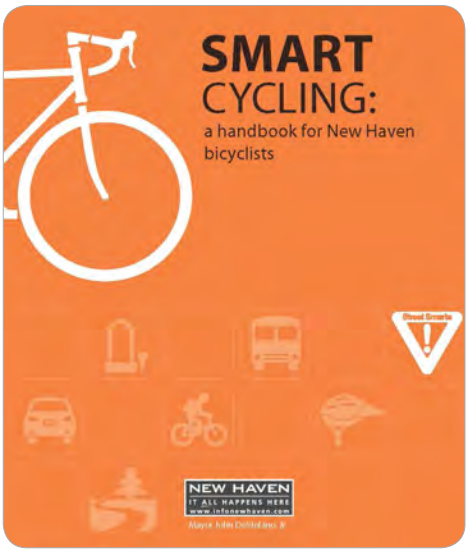
The *Complete Streets Design Manual* outlines a four-step street design process that accommodates both City- and community-initiated projects (see below). The *Manual* also provides useful information for those not familiar with complete streets, including introducing basic engineering concepts such as intersection design and emergency access. A complete streets toolbox is provided in the *Manual*, discussing complete streets tools such as crosswalks, pavement markings, speed humps, diverters, bike boulevards, and roundabouts – and also photos to depict local examples.



Complete Streets Design Manual 4-step street design process for City- and community-Initiated projects.

Because safety was a central and compelling focus in initiating complete streets efforts in New Haven, the City has focused significantly on safety promotion efforts in concert with efforts to improve infrastructure. The Street Smarts campaign was initiated first, as an effort to draw motorists attention to other users on the street. The City developed a logo, informational materials, promotional items (e.g., stickers, magnets, brochures) and a pledge of commitment that could be submitted to the Mayor's Office in exchange for a magnet. The initial focus was on drivers through the Drive Smart program and was followed up with a Bike Smart campaign. The campaign provides basic information about bicycle safety and using bicycle facilities. In 2011, the City developed a Smart Cycling Handbook, which provides guidance related to a wide range of topics including safety, maintenance, bikes and transit, bicycle facilities, and crime. A Walk Smart effort has been initiated for further development. The City of New Haven and Yale University have worked together to advance safety in the transportation system. The Yale campus is in downtown New Haven and many students and employees use and cross local streets. Yale's own Smart Streets campaign, which features an interactive website, has additional educational and promotional materials targeted toward the community and students.

City of New Haven Streets Smarts logo
source: City of New Haven



City of New Haven Streets Smarts developed a promotional campaign for safe drivers and bikers. It highlights respect for other road users, describes signage, and provides additional information specific to modes.

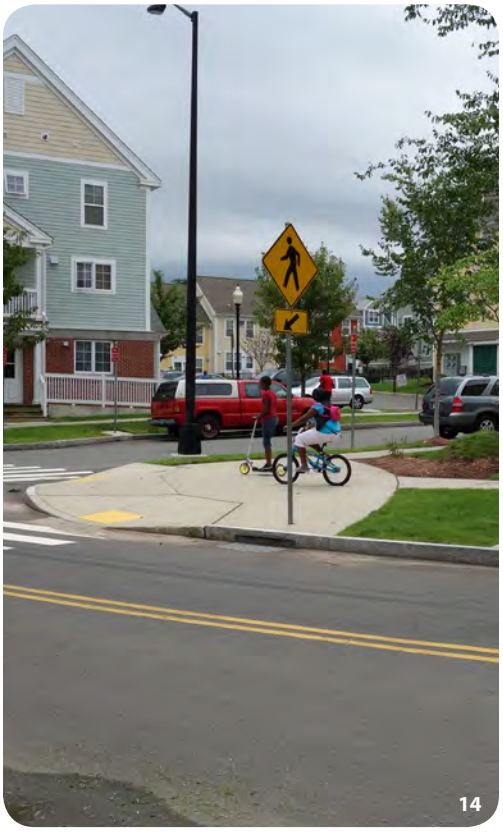
source: City of New Haven

3-5. Edwards Street speed table (raised intersection) features medians, landscaping, paved crosswalks, signage, and sharrows, intended slow traffic in single/multi-family residential neighborhood and accommodate multiple modes. Speed humps are also placed nearby to slow approaching traffic.

ADDITIONAL PROJECT PHOTOS

6-7. Downtown New Haven streetscape features wide brick sidewalks, street trees, period lighting, pedestrian scale signage, and landscaping.

8-11. Woodward Avenue improvements, including two roundabouts, enhanced signage/signals, pedestrian crossings, and sharrows, are intended to slow traffic and accommodate multiple modes in a residential neighborhood. The street connects several neighborhoods and destinations including a large park.



12-15. Quinipiac Terrace is a HOPE VI project that incorporates multiple complete streets features including narrow streets, pedestrian crossings and signage, bike lanes, and landscaping. The street design components are integrated with a neo-traditional land use pattern with short setbacks, front porches, on-street and shared parking. The project is adjacent to a park and school, with pedestrian connections provided to both.

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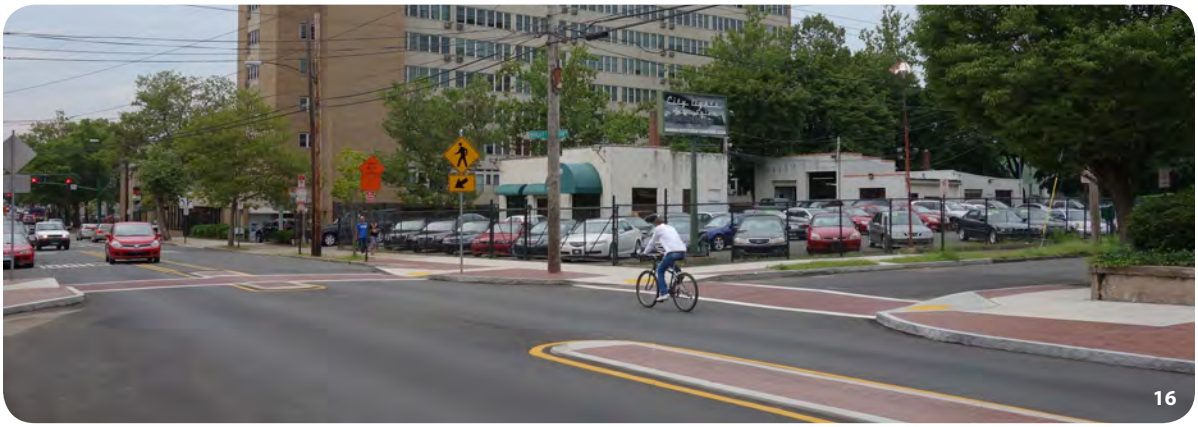
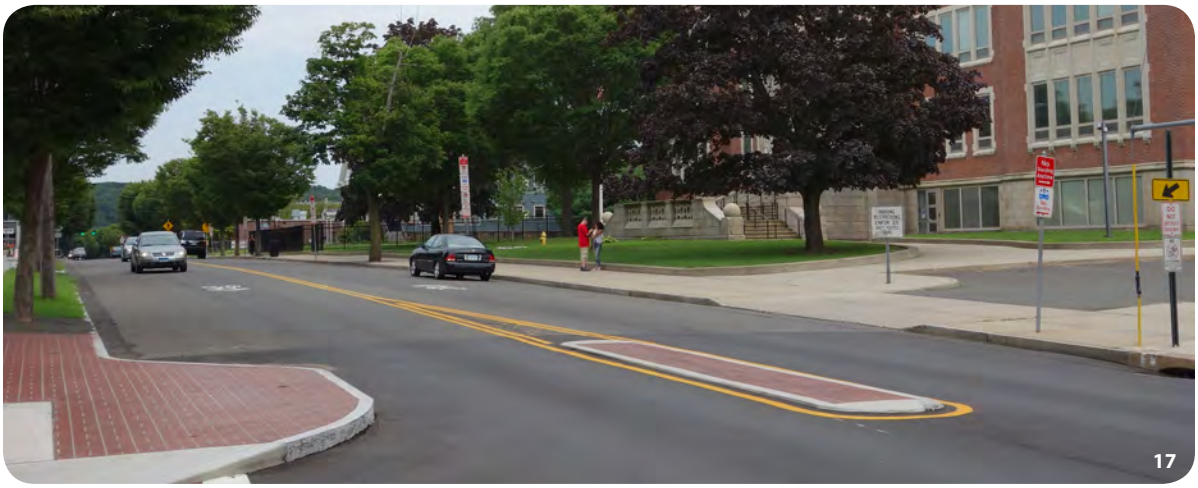
Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota





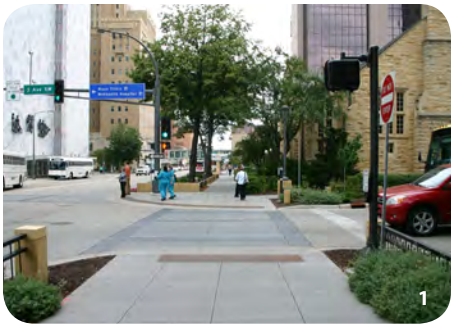
16-17. Enhanced crossing, bumpouts, signage, and sharrows intended to slow traffic near a middle school. This project process featured extensive neighborhood involvement and was funded with a grant from the Safe Routes to School Program.

CASE STUDY 11

Rochester, Minnesota

OVERVIEW

The City of Rochester was the first municipality in the state of Minnesota to adopt a complete streets policy. Passed unanimously in 2009, the City's *Policy* was developed by the Rochester-Olmsted Planning Department, which leads planning efforts for the merged Rochester and Olmsted County jurisdictions. The City's *Policy* applies only within municipal boundaries, and the combined planning department has been successful in achieving a high level of buy in from city council, staff, and community leaders. This support has led to the implementation of improved network planning, investments in bike, transit, and pedestrian infrastructure, incorporation of complete streets language in various planning documents, and educational campaigns focused on safety across all transportation modes.



1. The intersection at 2nd Street and 3rd Avenue features wide sidewalks and colored concrete pedestrian crossings.

KEY FINDINGS

- The 2009 Active Living Grant awarded to the Rochester community by Blue Cross and Blue Shield of Minnesota was foundational to the development of a complete streets policy and program.
- Strong interdepartmental coordination and committed staff leadership is central to the Rochester's success in advancing policy and projects.
- The City's initial focus on low hanging fruit and highly visible projects, but with an eye for the overall system, is building support and understanding of the need for larger system-wide improvements.
- Public engagement and education early in the project implementation process can help garner support, address concerns, and incorporate residents' perspectives.

2. Where Peace Plaza crosses 1st Avenue, colored concrete is also used to distinguish crosswalks.

CONTEXT

The City of Rochester, Minnesota is located about 80 miles south of the Twin Cities and is home to the renowned Mayo Clinic. With a population of 106,769, it is the third most populous city in Minnesota (US Census). The City covers just under 55 square miles, and serves as the county seat for Olmsted County. Of those who commute to work, an estimated 4.5% use transit, 3.6% walk, 0.8% bike according to the 2011 American Community Survey (US Census).

In 1975 the City of Rochester and the County of Olmsted merged their planning departments, resulting in the Rochester-Olmsted Planning Department. The department supports transportation planning efforts for the Rochester-Olmsted Council of Governments (ROCOG), the regional metropolitan planning organization (MPO).

Community Stats

106,769 persons — population	55 sq. miles — total area
8.9 percent — commute by bike, walk, transit	48.9 inches — avg. snowfall

Source: 2010 US Census, 2011 American Community Survey, 2012 National Oceanic and Atmospheric Administration

DOCUMENTS

City of Rochester Complete Streets Policy

Adopted with unanimous support by the City Council in 2009, Rochester's *Complete Streets Policy* was the first municipal policy adopted in the state of Minnesota. The *Policy* articulates a number of reasons why the City should consider complete streets in the transportation planning and design process. Some key reasons listed in the policy are providing for multi-modal connectivity and access to various destinations, encouraging active living lifestyles, and accommodating the needs of all users regardless of age and ability. The *Policy* also articulates important contextual factors to consider such as the character of the corridor, its connection to destinations, future bicycling, walking, and transit demand. It also describes what projects warrant exemption from complete streets consideration and the process to do so; City Engineer and the Director of Planning and Zoning jointly determine exemptions and the City Council has the power to approve the exemption.

Rochester-Olmsted Council of Governments Complete Streets Policy

In 2011 the ROCOG adopted its *Complete Streets Policy*. The *Policy* calls for all transportation improvements to be considered with all users and abilities in mind. The intent of the ROCOG establishing a policy is so "all roads will include appropriate accommodations for users including pedestrians, bicyclists, mass transit, people with disabilities, the elderly, freight providers, and emergency responders." It also states, "ROCOG will integrate complete streets principles into planning documents such as the ROCOG Long Range Transportation Plan, Corridor and Subarea

3. At the intersection of 2nd Street and 6th Avenue a pedestrian refuge incorporates rain gardens, ADA compliant ramps, and audible countdown timers for pedestrian signals.

Plans, Pedestrian and Bicycle plans and other MPO plans and programs as appropriate."

Rochester-Olmsted Council of Governments 2040 Long Range Transportation Plan

Updated in August 2010, the purpose of the ROCOG *2040 Long Range Transportation Plan* is to identify transportation investment needs over the next 30-40 years, coordinate planning at different jurisdiction levels, and to provide system planning maps that communicate desired community growth and land development. Chapter seven of this document describes current bicycle and pedestrian system, future needs of the system, strategies, and investment guidelines. "Promoting the application of Rochester's complete streets policy" is identified as a bicycle and pedestrian network key concept and supportive language articulating how this may be executed

is found throughout the chapter. For example, in Public Transportation section the following statement is made, "Transit trips typically begin and end with a walk or bicycle trip. . . Therefore, high priority should be given to providing sidewalks and bikeways along transit routes and on local streets connecting to these routes from neighborhoods." This statement may help guide the prioritization process to accomplishing complete streets in the City.

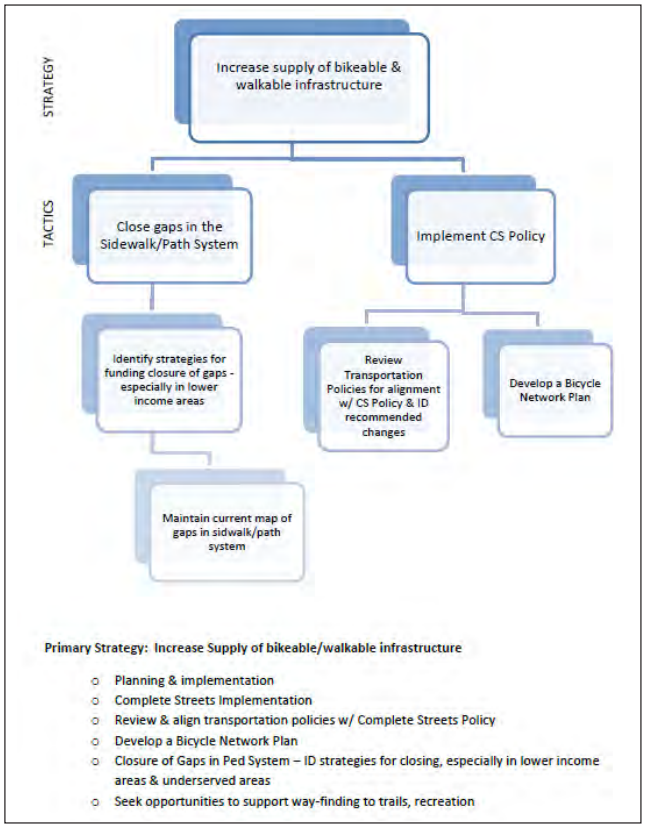
Bicycle Master Plan

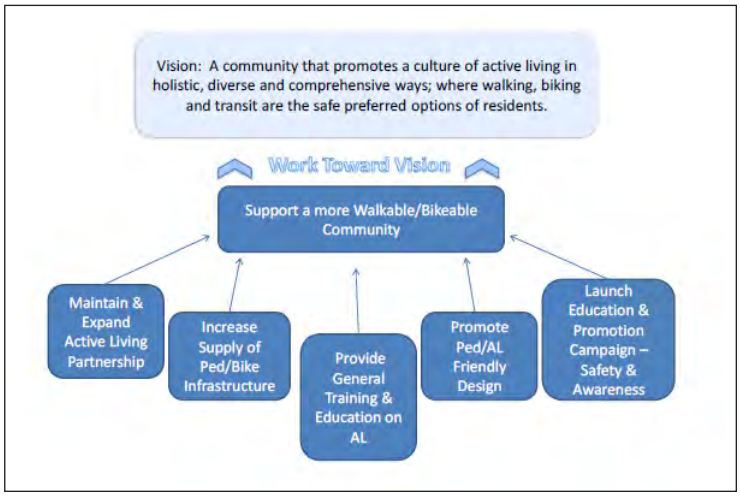
Adopted in the summer of 2012 by the ROCOG the *Bicycle Master Plan* provides guidance and direction for continued investment in bicycle infrastructure in the Rochester area. The document lays out clear goals and objectives, strategic development, and education as it relates to bike, pedestrian, and vehicular safety. The document also describes how community members were engaged in the master planning process, and describes key aspects to address such as connectivity, education, enforcement, as well as key corridor gaps as identified by the community input process.

Active Living Rochester: A Blueprint to Support an Active Living Community

The *Blueprint* was developed as a result of the Active Living Minnesota grant awarded to the Rochester community by Blue Cross and Blue Shield of Minnesota. The document was developed by a partnership, including CardioVision 2020/Mayo Clinic, Rochester Public Works, Olmsted County Public Health, and Rochester-Olmsted Planning. The *Blueprint* outlines goals, strategies, and tactics the partnership identified as ways to encourage healthy, active lifestyles in the Rochester area. Intended as a guide, and not a "rigid prescription for how work will progress," the Blueprint calls for the creation of a complete streets policy, review and alignment of transportation policies with a new complete streets policy, and implementation of complete streets projects.

> ***"The [Active Living] initiative laid the groundwork for developing draft amendments to the Rochester Zoning Ordinance and Subdivision regulations, the Comprehensive Plan and City Policy to better support a built environment that includes opportunities for physical activity in daily routines" (ROCOG, 2009).***





Pages from *Active Living Rochester: A Blueprint to Support an Active Living Community* illustrate how Rochester is working towards its vision of a healthier community, and how changes in transportation planning are a part of that process.

From the ROCOG 2040 Long Range Transportation Plan

ROCOG should assist the city of Rochester in its efforts to implement the Complete Streets policy adopted in 2009 to ensure that the transportation project development process includes early consideration of the land use and transportation context of the project, identification of gaps or deficiencies for various users that could be addressed by the project, and what enhancements could be provided to address pedestrian, bicycle or transit deficiencies, and an assessment of the trade-offs to balance the need of all users.

source: Rochester-Olmsted Council of Governments

PRACTICE

Rochester's participation in the Blue Cross Blue Shield Active Living grant program set the stage for the City to pursue a complete streets program. In 2007, the Rochester-Olmsted Planning Department began its partnership with Blue Cross Blue Shield as one of eight Active Living Minnesota grantees. The goal of Active Living Minnesota is to increase access and reduce barriers to routine physical activity through changes to a community's environmental characteristics and policies (Active Living by Design).

As noted in the previous section, the broader partnership included a number of public sector partners, as well as the Mayo Clinic. As one of the first steps in the program, Rochester-Olmsted Planning staff conducted a Strengths Weaknesses Opportunities Threats (SWOT) analysis. This analysis helped identify potential environmental and policy-based interventions. Transportation infrastructure emerged as a key opportunity, and as the term "complete streets" was becoming more commonplace, leaders drew the connection between encouraging active living and the potential positive impact of developing a complete streets program. City leaders felt that if the City was able to address its transportation infrastructure in a complete streets manner, the Rochester environment would encourage residents to incorporate more physical activity in their daily lives. Additionally, some leaders acknowledged transportation is a social justice issue noting that everyone has a right to move around the city. Creating complete streets provides critical access to transportation for those who do not or cannot drive.

4-5. The 4th Street Bridge was recently improved and features traffic calming devices such as wider sidewalks, planters, reduced travel lane widths, and a planted median.

6. 12th Street in southern Rochester was recently reconstructed and the City implemented medians with pedestrian crossings, a bike lane, and ADA compliant ramps in the redesign of this busy corridor.

Rochester's complete streets policy was drafted as a collaborative effort between Rochester-Olmsted Planning staff and Rochester Public Works staff. Planning staff initially drafted policy language and coordinated with public works staff to refine the policy. Staff members reference this effort as a long process, but a collaborative one that was crucial to achieving buy-in among staff, council members, and the community.

Implementation of complete streets takes multiple forms in the Rochester community. Staff members recognize complete streets implementation as not only the execution of physical projects, but implementation is also pursuing policy change and developing education campaigns. The planning staff has worked toward infusing complete streets language into city code, subdivision ordinances, and long range planning documents such as the ROCOG *2040 Long Range Transportation Plan* and the *Downtown Master Plan*. Planning staff have found that incorporating complete streets language into updates or revision of planning documents is an important way to institutionalize complete streets, noting that "staff then see complete streets the way of doing business rather than an 'add on.'"

Rochester has also developed an education campaign, and some staff note this effort is an important aspect of complete streets. The SEE.SAFE.SMART.ROCHESTER campaign is focused transportation safety and raising awareness around ways to avoid modal conflicts. Staff mentioned it has the added benefit of bringing complete streets into the community consciousness. The campaign started in 2010 and is an outgrowth of the Active Living Rochester initiative, with its goal to "foster more active, healthy lifestyles while raising awareness that safety is still the number one priority on the city's roads, paths and sidewalks" (Olmsted County).

"It is important to learn from your mistakes and we're doing that. Early engagement and consistent communication is important for buy in on a project by project basis."

3. Examples of the SEE.SAFE.SMART.ROCHESTER campaign materials. Brochures and calendars were produced and campaign signage was placed on buses and billboards in high traffic areas.

In terms of the implementation of complete streets infrastructure, Rochester uses its Comprehensive Pavement Management Strategy (CPMS) to identify locations slated for improvements during the upcoming construction season that might be candidates for complete streets improvements such as striping, signage, or other interventions. The City does not maintain a complete streets project

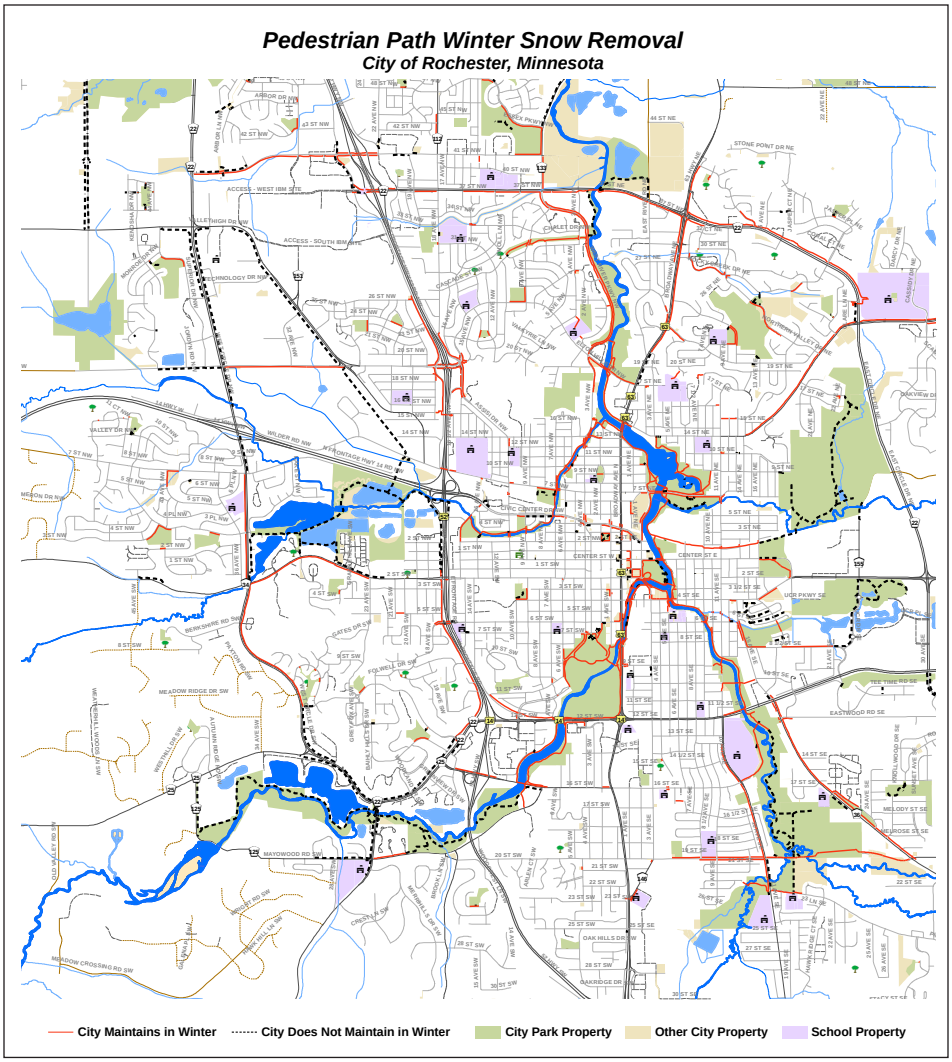
7. Newer crossing signals incorporate directions for pedestrians, and are audible for the hearing impaired.

"[Complete streets] is really a social justice issue. Not all people can drive or chose to drive. We need to accommodate all segments of the population."

priority list, but rather information coordination and ongoing communication among staff in the public works, traffic engineering, and planning departments is important to Rochester's ability to integrate complete streets into its existing transportation plans and projects. For example, in the summer of 2011, the City's Traffic Engineer and planning staff members met to discuss all mill and overlay projects and identify how pedestrian and bicycling improvements could be incorporated into projects. This type of coordination resulted in the implementation of striped bike lanes in a number of projects, and it helps maintain rapport and respect across departments.

City staff has worked to engage the community early in the design process for complete streets projects. Staff members find that early engagement can help in educating the public on the benefits of changes in a roadway alignment or design, as well as responding to concerns voiced by community participants.

Maintenance, especially in Minnesota's winter climate, has been another area of focus for the City. Staff work to plow key pedestrian, cycling, and vehicular corridors. To keep the community informed about the winter maintenance of their transportation system, the City publishes a winter maintenance map that is available online (see below).



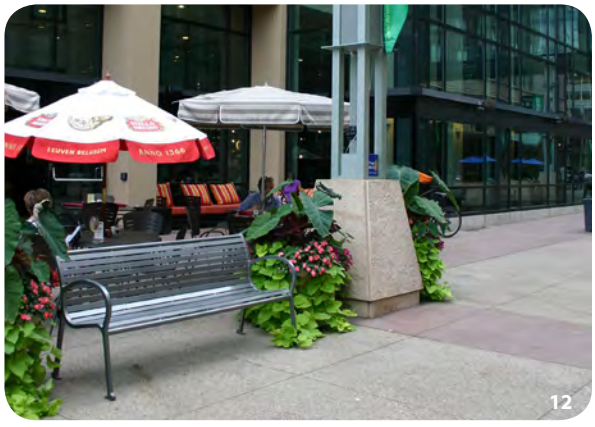
A zoom in of the Pedestrian Path Winter Snow Removal Map. This map communicates not only which pedestrian paths are maintained during snowy winter months, but also which ones are not maintained.

8. Peace Plaza is a renovated plaza that also functions as a pedestrian mall connecting people to retail locations, the University of Minnesota Rochester campus, Mayo Clinic, and hotels. The plaza provides ample seating, pedestrian scale lighting, and multiple places to congregate. The Plaza connects to 2nd Avenue SW which is also limited to pedestrian traffic in the downtown area.

9. Integrated lighting provides additional pedestrian scale lighting and becomes a design element that runs throughout the plaza across 1st Avenue where the plaza continues.

10. As the plaza intersects with 1st Avenue the pedestrian crossing is at grade, meaning pedestrians do not have to surmount a curb or ramp to cross the street. It is a wide crosswalk with colored concrete and timed crossing lights.

11. Across 1st Avenue Peace Plaza continues and connects to shops and the University of Minnesota Rochester campus.



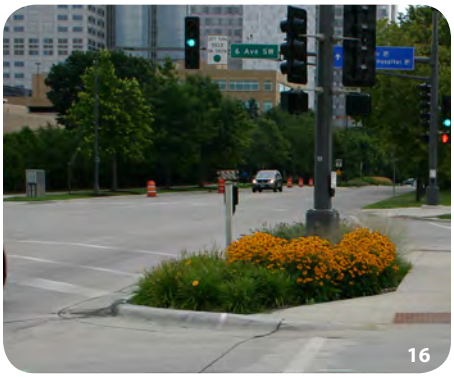
12. Seating elements are found throughout the plaza.

ADDITIONAL PROJECT PHOTOS

13. This one block section of 2nd Avenue is calle the Peace Plaza and is limited to pedestrians traffic, serving as part of the pedestrian network in downtown Rochester where users do not have to walk along a busy street.

14. Transit stations along 2nd Street provide sheltered space for users as well as lighted signage communicating important messages.

15. A parking lot adjacent to the transit station provides bike parking.



16-17. Along 2nd Street, numerous plantings make the space more pedestrian friendly and help in dealing with stormwater runoff.

18

19

20

21

18-21. 2nd Street is well-traveled by pedestrians, automobiles, and transit. In the downtown core, the City has used colored concrete to denote pedestrian crossings, provided wide sidewalks with wide ramps to accommodate many people, and incorporated seating and transit stations into the new design.

22

22. Planted boulevard strip along 12th Street in suburban Rochester.

RESOURCES

Active Living by Design. http://www.activelivingbydesign.org/. Accessed April 2, 2013.

City of Rochester. 2010. **Downtown Rochester Master Plan.** http://www.rochestermn.gov/departments/planning_zoning/masterplan.asp. Accessed April 2, 2013.

City of Rochester. N.d. **Pedestrian Facilities Winter Maintenance Map.** http://www.rochestermn.gov/departments/publicworks/maps/index.asp. Accessed April 2, 2013.

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Project sponsors

Case studies authored by:
Carissa Schively Slotterback, PhD, AICP & Cindy Zerger
Humphrey School of Public Affairs, University of Minnesota

23. Wide curb cuts and wide crosswalks along 2nd Street and 3rd Avenue provide good accessibility for wheelchairs and allow for larger groups of pedestrians to cross together.