Taking Action on Complete Streets
Implementing processes for safe, multimodal streets

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The National Complete Streets Coalition, a program of Smart Growth America, brings together public interest groups and practitioner organizations to work for the adoption and effective implementation of Complete Streets policies at the local, state and federal levels. Complete Streets is a planning and design process that ensures most roads are planned, designed, constructed, operated, and maintained for the safe access for all users, regardless of age, ability, or mode of transportation.

Smart Growth America is the only national organization dedicated to researching, advocating for and leading coalitions to bring better development to more communities nationwide. From providing more sidewalks to ensuring more homes are built near public transportation or that productive farms remain a part of our communities, smart growth helps make sure people across the nation can live in great neighborhoods.

For additional information, visit www.smartgrowthamerica.org/completestreets.

Acknowledgments

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Cover: Photo of Elizabeth Street in Charlotte, NC by Abby Hall, U.S. Environmental Protection Agency.
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Introduction

Complete Streets is a transportation approach that ensures all future street projects will take into account the needs of all travelers, regardless of age, ability, or mode of transportation. Although supporters work diligently and thoughtfully to craft supportive policies, it is only after adoption that the work truly begins. If all goes well, Complete Streets becomes a compass as an agency changes its day-to-day transportation planning, design, operation, and maintenance practices.

The National Complete Streets Coalition views a Complete Streets initiative as having four distinct phases: policy adoption, agency institutionalization, better projects, and larger societal outcomes. This resource focuses on the second step in this process, the “agency institutionalization” phase of Complete Streets. It explores how transportation agencies can integrate Complete Streets into daily practice. This leads to changes in the street environment and eventually to better societal outcomes.

Complete Streets policies can flounder in implementation, particularly if the implementing agency was not fully engaged in a policy development process. To successfully implement Complete Streets, focus must shift to the inner workings of the transportation agency. Such a shift is much less abrupt and more likely to succeed if agency officials took part in establishing the vision and direction of the community’s Complete Streets work.

Complete Streets supporters are often tempted to immediately look for success in transportation projects: does the next project out the door include a bike lane, and a safe crossing for transit users? But focusing on changing individual projects requires tremendous amount of time and effort – as supporters quickly get caught what San Diego researchers call an “entrenched policy web [that] favors vehicle movement.” While a single project may be able to evade this policy web, future multimodal projects will likely still be caught in it, forcing community members to struggle repeatedly toward a more inclusive outcome.

Five kinds of activities need to take place in order to reorient a transportation agency’s work to fully and consistently consider the safety of all users:

- **Implementation Planning**: Assessing current procedures and activities and planning for the full implementation of Complete Streets
- **Changing the Way Decisions Are Made**: Updating documents, plans, and processes used in transportation decision-making, from scoping to funding, and creating new ones if necessary
- **Reviewing and Updating Design Guidance**: Updating or adopting new design guidance and standards to reflect current best practices in providing multimodal mobility
- **Offering Training and Educational Opportunities**: Providing ongoing support to transportation professionals, other relevant agency staff, community leaders, and the general public so that they understand the Complete Streets approach, the new processes and partnerships it requires, and the potential new outcomes from the transportation system
- **Measuring Performance**: Creating or modifying existing metrics to measure success in accommodating all users on the project and network level

Each of these steps requires agencies to think in new ways and, in order to do so they must include a wider range of stakeholders in decision-making. This report details a number of tools...
and processes communities are using to achieve an inclusive outcome, including engaging stakeholders in new committees, and task forces, and using charrettes and workshops to develop vision statements, processes and tools, and even street plans. A common theme is gaining a greater understanding the varied travel needs of different members of the community, and setting up systems that respond to those concerns. Complete Streets is not concerned only with the travel mode (car, bus, bike, or foot), but also the traveler: older adults, people with disabilities, children, and people with lower incomes and those with limited access to automobiles, all have unique needs that must be addressed as part of the design of the transportation system. These populations are an important part of the conversation about a new way of approaching transportation planning.

Fortunately, many communities are moving in this direction. Some are taking smaller steps and others are striding toward a completely new approach. The most successful Complete Streets efforts result not only in better projects, but also in a better process in which transportation agencies are actively seeking ways to create a safer and more multimodal transportation system. This document directs readers to learn from all of their experiences and includes success stories and challenges.

Each of the five kinds of activities is explored in detail in this report. Case studies are interspersed within the text, offering in-depth insights into the changes these communities are making. In many of the case study communities, public health agencies have played an important role in convening and educating stakeholders, often with the support of federal grant funding. It is important to note that each funding source has different requirements about the appropriate use of those funds and agencies must ensure that they are adhering to all rules and regulations of their funding source when pursuing these activities.

A listing of additional resources, including documents used in agencies across the country in achieving their Complete Streets goals, is provided for each of the five subject areas. Although this report addresses those activities in a particular order, there is no one clear path that communities must take to be successful. Some may happen concurrently with other activities and over time, while others may become the sole focus of an agency for some phase of implementation.

Transportation planners, engineers, and department officials will find this report helpful in considering how to implement a Complete Streets approach. Other stakeholders with knowledge of transportation issues, such as community leaders and public health agencies, can reference this document in assisting the transportation professionals successfully integrate the needs of all users into every decision-making.
I. Implementation planning

Common activities:
- Designate a lead person or agency to oversee implementation
- Create broad based committees to oversee the process or make project-level decisions
- Write a formal implementation plan
- Require public annual reports that include Complete Streets progress
- Conduct an inventory of documents that need to be changed to bring them in alignment with a Complete Streets approach

With such a straightforward goal—safely accommodating all users in road projects—agency officials sometimes assume that they face a design challenge that can be achieved in a straightforward way, perhaps by creating or updating a single checklist in the project development process to ensure planners and designers are thinking about all modes. Many communities have used such checklists successfully (see “Changing the way decisions are made” on page 12). However, a single checklist is unlikely to address the complexities of the web of policies that put a priority on moving cars. A conscious implementation process can help people identify all the systems, routines, codes, plans, and assumptions that, together, have created the current transportation system.

A first step in this process can be a Complete Streets Implementation Workshop, which brings together people from all departments with some interest in the streets, such as Planning, Public Works or Transportation, Transit, Parks, and Health as well as concerned decision-makers, community members, and interest groups such as AARP volunteers or bicycle groups. Often the first revelation of the day is discovering that no one has a clear picture of all the steps involved in choosing, planning, and building transportation projects. People from different departments often learn about what their counterparts do; and, as a result, the barriers to a Complete Streets approach become obvious.

This understanding can also come about when people from different agencies, departments, and interest groups meet as part of a committee or advisory board charged with implementing the policy. Some communities, such as the cities of Chicago and Seattle, have undertaken a formal review of all documents that may require updates to comply with a Complete Streets directive.

Some policy documents help point to success by designating a person or committee to lead or oversee implementation work. If it has not, champions should see this as a first order of business. In some places without a clear leading voice or thoughtful plan, departments with different viewpoints are not motivated to work with each other or to negotiate their way to new procedures. Each department may take the small steps they can manage on their own, but otherwise they may face a stalemate.
Case study: Nashville, Tennessee

Complete Streets is one part of Nashville/Davidson County Mayor Karl Dean’s effort to end the epidemic that has left 30 percent of its adult citizens obese. In addition to its low ranking in national measures of health, the Nashville region does not rank well for its transportation and land use planning: a 2010 report found that among residents of large cities, Nashville commuters spend the most time driving in rush hour, in part because of the extreme distances between the region’s destinations. The Mayor’s dedication to changing Nashville’s ways have been supported by a forward-thinking regional government, resources from a federal grant, and the skills of an extraordinary champion.

Long before the citywide Complete Streets policy, the city had begun working for a more multi-modal system by adopting a Strategic Plan for Sidewalks and Bikeways in 2003. Mayor Dean ordered an update to that plan within the first month of taking office in 2008. He also established a Bicycle Pedestrian Advisory Committee (BPAC). Toks Omishakin, who had been serving at the Bicycle and Pedestrian Coordinator in the city’s planning department, was tapped to lead it, and the position was moved from Planning into the Mayor’s office, a position of greater influence and scope.

Omishakin saw this as a major opportunity. He had begun to feel constrained in his relatively narrow role working from within the Planning Department for specific walking- and bicycling-related projects. He was able to speak from a broader platform of health, and, therefore, to build a supportive Coalition that went beyond the members of the bicycle community to including organizations and leaders with an interest in health and livable communities. In time, he was named Healthy Living Director of Nashville and took on running the two-year $7.5 million program. In May of 2012, after he’d left Nashville to take a position at the Tennessee Department of Transportation, he noted the big change he has undergone in his career. “Often times to make a broad-based impact, people need to get beyond the very technical role they may have played. I went from planning and designing facilities on the ground, to advancing policy, to having an influencer position.” He notes the transition wasn’t about personal ambition, but about focusing on what needed to get done—which meant broadening the number and types of people involved.

Implementation planning

Mayor Dean signed Nashville’s Complete Streets Executive Order on Walk to School Day in October, 2010, shortly after the City Council approved a transportation capital spending plan that directed 62% of its funds to multi-modal accommodation.

Implementation has been led by the BPAC, which counts among its members representatives from many agencies, including the regional transit agency, the school district, and the parks and health departments. Nashville has not had a formal implementation plan, but Omishakin and the BPAC worked to spur a number of initiatives across different city departments. The committee’s work includes education and enforcement efforts such as creation of a bikeshare system and a targeted bike map designed to help cyclists navigate Nashville’s still-incomplete streets. Omishakin’s grant-funded position has not been filled, although the BPAC is still staffed by the Mayor’s office. City planners say they have missed having one person working full time on coordinating the many activities of the BPAC.
**Process change**

The city had already begun changing its process in 2008 and 2009, when the sidewalk and pedestrian plans were updated and multi-modal considerations were included in the subdivision design standards.

In 2010, Nashville’s Planning Department undertook a complete re-write of the Major Collector and Streets Plan (MCSP) to bring planning for the road network fully in line with the city’s land use, transit, and bicycle and pedestrian planning efforts. The plan is placed in context of the major changes in the region that have taken place since the last update—nearly 20 years prior—and expected changes through 2030. Planners expect rapid population growth in Nashville and a continued need to serve the wide variety of types of trips people take throughout the region, as well as the need to increase travel options for the growing population of older adults.

The plan is intended to guide future development and road building decisions, topics that are cross-departmental. The Planning Department offered other agencies and stakeholders opportunities to review and comment on drafts of the plan. However, using it on a day-to-day basis does not always go smoothly. Transportation Planner Michael Briggs says the design standards used by the Public Works Department sometimes don’t align with the plan’s designations, and no plans are in place to update those standards. The biggest problem, he says, has been pushback from developers. Some years ago the city began requiring zero-lot line development to stop the practice of suburban-style setbacks with parking lots out front. But now, “in instances where we want to get two or three feet more right-of-way for sidewalks or bike lanes, [developers] feel we are infringing on their development rights.” The city is seeking to adjust with another change in the zoning code.

The Planning Department has also changed the way it interacts with citizens. The city has 13 community-level plans, and Briggs says when they bring the plans into the neighborhoods for review, they now ask community members attending the meetings to select the top few projects by mode. “We ask, ‘what are the 1 or 2 things you want for each: the street, for sidewalks, for transit?’” Briggs says asking this question helps stakeholders focus on a few projects they can support.

Public Works has been pursuing its own Complete Streets procedural changes. Donald Reid, Paving/Right of Way Manager, created a Complete Streets Evaluation Form that is used in the field when assessing repaving needs. When possible, his department changes striping to add bike lanes or paves formerly gravel shoulders to allow walking and bicycling. The paving division also corrects drainage grates that are dangerous to people on bicycles and has a long-standing policy of using pavement funds to add and fix sidewalks and curb ramps. The Department’s work has helped the city has complete 133 miles of its bikeway network.

Nashville has been helped along by the Complete Streets approach of the regional transportation agency, the Nashville Area Metropolitan Planning Organization (MPO), which has been strongly backed by residents. In 2010, an MPO survey found that the most prevalent transportation concerns of the region’s citizens were a lack of transit, bicycling, and walking options, with concerns about crashes and poorly planned development following close behind (Nashville Area MPO 2010). In response, the agency revamped its scoring system for selecting projects that receive federal funding. Now, about 60 points on
the 100-point scale pertain to active transportation, health, and safety. The new scoring system also prioritizes active transportation projects that would serve low-income, minority, and older populations most threatened by the obesity epidemic and chronic disease. The system gives points if projects fall into ‘health impact areas’ where these populations are concentrated. According to Leslie Meehan, Director of Healthy Communities at the Area MPO, about 70% of the projects included in the 2010 five-year plan have a bicycle or walking element—only about 2% of the projects included in the 2005 plan had such facilities. The 2035 Regional Transportation Plan won a Transportation Planning Excellence Award from the Federal Highway Administration. The MPO also sets aside about 30% of its federal Surface Transportation Program dollars for active transportation and transit projects. It is also starting to use an activity-based trip generation model to predict where and how much people will use bicycles and walk to reach destinations. Traditional transportation modeling systems completely ignore this type of travel.

Design manual
Instead of creating a single design plan for an arterial that stretches from downtown to the county line, the new Major and Collector Street Plan (MCSP) gives each street segment three designations to describe its context and the uses it will serve. The three designations are Street Context, defining the street as Residential, Mixed Use, or Industrial; Functional Design Type to classify the type of transportation service they are supposed to provide; and Transect Zone, which categorizes adjacent land uses by density and character. A fourth special overlay category designates roads that serve as primary transit corridors or have scenic value. The MCSP includes a map giving the street designations for all major streets in the city, as well as suggested cross-sections. The cross-sections show specific street elements and dimensions for streets of varying Street Context, Functional Design, and Transect designation. The MCSP is intended to be used by Planning and Public Works when considering new projects. It also applies to projects from private developers and will be used in zoning and subdivision applications, but it does not include a chapter on the exact process to be used. The design standards used by Public Works have not been updated yet.

Training and education
The MPO has been a driver in the process of communicating the Complete Streets approach to practitioners and citizens. It sponsored a two-day Complete Streets Symposium in 2010, and has worked to bring other resources to the attention of its member jurisdictions. In addition, its work to advance the use of health impact assessments in transportation decisions helps educate and engage community members about the benefits of a Complete Streets approach. Mayor Dean has been a constant promoter of the new approach, speaking often about the importance of changing the built environment for health.

Performance measures
Nashville is now in the process of applying for Bicycle Friendly Community status and Briggs says this is helping them establish a baseline for future performance. Public Works tracks miles of new bike lanes and other facilities. The MPO is doing the most in this area, as it moves to Activity Based Modeling for traffic forecasting. The city conducts bicycle and pedestrian counts using the methodology of the National Bicycle and Pedestrian Documentation Project and has found enormous increases in foot traffic along some corridors that have received transportation investments.
Leading implementation

A common method for organizing implementation is the establishment of a committee. When leadership is clearly established, it can organize everyone’s efforts. In the westernmost islands of Hawaii, the Kauai County Council adopted a Complete Streets resolution in September 2010 and designated Get Fit Kauai to oversee implementation and, importantly, to report back to the Mayor and City Council after 18 months. To lead that process, Get Fit Kauai formed a Built Environment Task Force, with representatives from several county departments, including Planning, Parks and Recreation, Health, Public Works, Engineering, and Housing, as well as several decision makers. Some members of Get Fit Kauai were unsure if a resolution would provide enough impetus to really change practice and knew they would need to work hard for implementation.

Bev Brody, the Facilitator of Get Fit Kauai, is a public health educator without much transportation experience. She sought nationally known experts from around the country to help guide their process. With her guidance, the County hosted a Complete Streets implementation workshop and brought another expert in to provide more detailed consultation. In the following months, the Built Environment Task Force used their monthly meetings to systematically address design guidance, subdivision regulations, and performance measures.

Another champion who was able to work effectively through a committee was Toks Omishakin in the combined county-city government of Nashville and Davidson County, Tennessee. Omishakin started out as the bicycle and pedestrian coordinator in the Planning Department but moved into the mayor’s office to lead a new Bicycle Pedestrian Advisory Committee (BPAC). Under direction from Mayor Karl Dean, he later was named Healthy Living Director and led the investment of a $7.5 million grant to improve health in Nashville. Omishakin, as part of the duties directed to him in this new position, built a strong coalition to work on active transportation and Complete Streets, including the Health Council, sustainability supporters, and community officials. With this broad group of engaged, multi-disciplinary supporters, as well as the leadership of Mayor Dean, Omishakin was able to advance many activities that would lead to an institutionalized Complete Streets process. Although Omishakin has since left the city to work for the Tennessee Department of Transportation, the BPAC remains in charge of implementation in Nashville, and has continued to oversee many programs and activities that advance the Complete Streets agenda. However, Omishakin’s grant-funded position has not been filled, and some in the city say they miss his ability to work across departments to solve problems. Communities should consider creating distributing leadership of Complete Streets implementation among several people to prevent the feeling of loss that Nashville experienced.

Formal implementation plans

While most communities have centered their implementation planning on committee activities, or on updating specific documents or design guidance, some communities have written formal implementation plans. Creating an implementation plan or framework can maintain the momentum picked up during policy development, and it can help keep stakeholders engaged as the focus shifts to implementation activities. The creation of such a plan should involve people across the transportation agency, from planners to engineers to maintenance staff, and key stakeholders from the community. An implementation plan provides the opportunity to assess current decision-making practices; to review relevant documents, including subdivision codes, design guidance, checklists, decision trees, and plans; to assign responsibility; and to create estimated timelines for accomplishing those tasks. The community can use the resulting document as a tool to communicate its work with other agencies, with community leaders, and with supporters.
Such plans are generally owned by either the agency responsible for transportation projects or by a larger collection of agencies that each have assigned activities within the plan. Monitoring of the plan can be accomplished via a list of deadlines and noting specific people (identified by name or title) who are responsible for activities. A leader or committee assigned with leading implementation, as discussed in the section above, can monitor the plan on a regular basis. The inclusion of deadlines and assigned responsibilities are essential for government transparency.

Two good examples of formal implementation plans have been adopted in Minnesota. The Minnesota Department of Transportation, recognizing the benefits of a clear implementation plan, began creating one even before the Governor signed Complete Streets into law. The plan is divided into nine sections and is set up in a chart format that assigns responsibility and deadlines for each step. The plan covers project development and addresses planning, funding, communications, and performance measures.

Saint Paul, Minnesota is one of the few cities nationwide that has adopted a formal Complete Streets implementation plan. The Saint Paul Planning and Economic Development and Public Works Department, working with other city departments as appropriate, created a three-step implementation process, funded in part by a grant from the U.S. Department of Transportation. The three elements are:

1. An assessment of the street design process, transportation infrastructure and network gaps;
2. The writing of a street design manual that will include local and state standards, best practices and an evaluation of how well street users are served by different design elements; and
3. The design of pilot projects using the new design manual to test and revise the manual, as needed.

Annual reports
A growing trend among municipalities implementing Complete Streets is to provide annual reports. Such reports are shared via a department’s website, presented to Council, or otherwise made public. They often include an annual update on performance measures set within the Complete Streets policy document or transportation plan. They may also provide an update on progress in implementation, based on requirements from the policy document or as decided during the implementation planning stage. Such information could include the steps the community plans to take, a rough timeline for action, and those that have been completed to date. Reports allow for transparency in the implementation process, support educational efforts about Complete Streets, and keep an agency on track. Reports are also a great way for communities to celebrate their achievements. See additional information in the “Measuring performance” section of this report for examples.
Case study: Kauai County, Hawaii

In Kauai County, Hawaii, the infrastructure created by public health has been critical to both the development and implementation of the County’s Complete Streets efforts.

Kauai County consists of the north-westernmost islands of Hawaii, and is a relatively rural county with about 70,000 residents. Because of Hawaii’s tobacco settlement, the County already had a robust organization working for a healthier environment: Get Fit Kauai. The organization’s capacity to work on built environment issues was expanded with a federal public health grant that helped educate and engage a broad variety of stakeholders in addressing issues related to the built environment.

The county passed a Complete Streets resolution in September of 2010, directing that roads be designed for all users. The document spelled out exceptions and designated the Built Environment Task Force of Get Fit Kauai to oversee implementation and report to the Mayor and City Council in 18 months on progress. Bev Brody, the facilitator of the Task Force, says the support from Mayor Bernard Carvalho, County Engineer Larry Dill, and Deputy County Engineer Lyle Tabata has made it very clear that Complete Streets and Safe Routes to School are top priorities for the county.

Implementation planning
Some members of Get Fit Kauai were unsure if the resolution would provide enough impetus to really alter practice, but the Built Environment Task Force was determined to create change. The Task Force took a community survey, drew up an implementation plan, and created smaller workgroups to address areas such as workshops, trainings, and reviewing roadway standards. They used their monthly meetings to systematically address three implementation tasks: design standards, subdivision regulations, and performance measures. The Task Force has the right mix of members who have the skills and content knowledge to tackle these issues, with representatives from several county departments, including Planning, Parks and Recreation, Health, Public Works, Engineering, and Housing, as well as several decision makers, and stakeholders representing the interests of people with disabilities, older adults, economic growth, and other areas. Brody acknowledges that while she and other Task Force members outside of the transportation field were the catalyst for action, the county staff is taking on more and more responsibility for implementation.

Training and education
In Kauai, much of the education has been for the champions themselves, as they sought to learn enough to influence transportation practice. Brody is a public health educator and did not know what to do at first. So, she sought out transportation expertise from the National Complete Streets Coalition and other experts from around the country. Get Fit Kauai sponsored a Complete Streets implementation workshop and brought out Michal Moule, a nationally known transportation engineering consultant, to offer detailed consultation to county staff. Kauai has also hosted presentations, webinar viewings, walking audits, and workshops by walkability gurus Mark Fenton and Dan Burden.

Process change and design manual
The Task Force has been focusing on two major procedural changes: the creation of a design manual, and writing new subdivision ordinances. For the design manual, the Task
Force is using the Model Design Manual for Living Streets as its base. The Task Force has been working through the customizable Manual at a swift pace of one chapter per month. The County's chief engineer makes suggested changes to the base content, which are then discussed at the meeting. The Task Force has also written and debated a series of subdivision ordinances to require multi-modal accommodation in privately developed projects.

**Performance measures**

The chair of Get Fit Kauai, Jodi Drisko, is a public health evaluator, and she pushed the Built Environment Task force on the need to create ways to evaluate their success. The Task Force members took a divide-and-conquer approach to the potential performance measures the county could use, with each member responsible for researching the availability of baseline data or how to begin to collect it. Measures under consideration include bicycle and pedestrian crash data; vehicle-miles traveled per capita; percentage of children walking and bicycle to school; transit use; walking and bicycling mode share; and miles of streets retrofitted.

**Projects**

While most of Kauai’s work is focused on putting the systems together to create Complete Streets, the focus helped encourage installation of bike lanes on a widening project for a state highway into the city of Lihue. Hawaii Department of Transportation District Engineer Ray McCormick, who serves on the Task Force, says that last year, a community group came to talk to him about the project to widen Kaumualii Highway from the Kauai Community College into town, suggesting the addition of bike lanes. He says he told them, “Yes, but you are talking to a guy who has a project under construction!” The project was far enough along that the signal loops to detect cars were already installed under the pavement. McCormick nonetheless consulted with other engineers at the state Department of Transportation, and, by slightly narrowing the travel lanes and shoulders, they were able to add bike lanes. The project also included sidewalks, and widened the roadway from two to four automobile lanes.
Resources: Implementation planning

Implementation Plans
a) Complete Streets Implementation Action Plan, California Department of Transportation: http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html
b) Complete Streets Implementation Work Plan, Minnesota Department of Transportation: http://www.dot.state.mn.us/planning/completestreets/workplan.html

Committees
b) Minnesota Complete Streets Coalition: http://mncompletestreets.org/
c) Complete Streets Task Force, Hennepin County, Minnesota: http://www.hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01dfb47ccf06498/?vgnextoid=651c4e3fc1858310VgnVCM20000098fe4689RCRD
d) Complete Streets Committee, Lawrence, Kansas: http://lawrencecompletestreets.org/committee/
e) Complete Streets Advisory Committee Boston: http://www.bostoncompletestreets.org/about.php
g) Complete Streets Steering Committee Roster, California Department of Transportation: http://www.smartgrowthamerica.org/documents/cs/impl/ca-dot-steering.doc
h) Complete Streets Technical Advisory Committee Roster, California Department of Transportation: http://www.smartgrowthamerica.org/documents/cs/impl/ca-dot-tech.doc

General
a) From Inspiration to Action: Implementing Projects to Support Active Living, Walkable and Livable Communities Institute and AARP: http://www.walklive.org/project/implementation-guide/
II. Changing the way decisions are made

Nashville’s new Major and Collector Street Plan says, “Complete Street design should be understood as a process, not a specific product.” Changing the everyday processes that guide decision-making is at the heart of Complete Streets initiatives. Changing the processes planners and engineers follow on a day to day basis is challenging, but is essential if Complete Streets plans or new design manuals are to do more than take up space on a shelf or website.

Inclusive decision-making
Process changes will be most successful if the overarching Complete Streets goals were made clear when developing a policy and if transportation staff members have embraced the new goals. The fundamental goal of Complete Streets is improving safety for all users, but in some communities, the most-talked-about goals may be increasing physical activity and health, providing a base for economic growth, or meeting sustainability targets. Achieving these goals, and the changes they entail, requires creating a more inclusive decision-making process.

In many communities, Complete Streets implementation is delayed, or even derailed, by ‘silos’ that have been built within and between agencies. One Complete Streets supporter described the departments in his city as operating as ‘fiefdoms,’ with each department director working independently on a narrow agenda. Simply bringing the right people together to discuss projects in light of Complete Streets is an important procedural step. Those involved should include appropriate staff members who are involved with transportation projects, as well as who should be involved. (See the included case studies for some examples.) Smaller communities may have more opportunities to collaborate on projects because it is easier to coordinate when departments are smaller and fewer staff need to participate in meetings. In larger jurisdictions, a more concerted effort is needed to manage interdepartmental initiatives, though informal conversations can help spur across-the-board support for a Complete Streets approach.

A committee charged with implementing Complete Streets often becomes a driver of change precisely because it provides a forum for different departments to work out problems – if it has the right people in the room. In a few cases, committees or advisory boards are too weighted with outside stakeholders to have true influence over what is happening inside the agency and their suggestions never make it back into the department. Additionally, representatives from

Common activities:
• Use new committees or regular interdepartmental meetings to consider project-level decisions on multimodal consideration
• Create project-level checklists to ensure planners and engineers are taking the needs of all users into account
• Define a process for exempting projects from Complete Streets requirements
• Update or adopt new bike, pedestrian, transportation systems, and comprehensive plans that support development of a network of Complete Streets
• Change project selection criteria to award points for multimodal accommodation
• Change maintenance and operations procedures to help identify low-cost projects that can be completed within the existing scope of work
• Create new project development systems
community agencies or departments on these committees must be able to influence process or make decisions on behalf of the agency. These committees are often most successful when they zero in on updating or creating a single document or plan, which provides an easy, action-oriented platform for working together.

Another forum for inclusive decision-making is the creation of project-level teams that bring together many agencies at the beginning of a new project. In Duluth, Minnesota, an internal, multidisciplinary Complete Streets workgroup encourages cross-departmental discussion through the lens of Complete Streets at monthly meetings. The city decided to implement its resolution primarily through this project-by-project technique, so the discussions within this group have greatly influenced the transportation process.

A team approach has been a hallmark of Seattle’s implementation of its Complete Streets ordinance, where each project prompts input from public transportation, utilities, and public health. The foundation of Seattle’s multimodal, multi-departmental is in a voter-approved 9-year, $365 million “Bridging the Gap” levy in 2006, which explicitly funds improvements for walking, bicycling, and public transportation infrastructure. With that backing, the city has not been shy to propose cutting-edge projects such as road conversions, dedicated bus islands, and buffered bike lanes. The proposed roadway changes are open to community feedback, and many projects get their own webpage with maps, photos, specific timelines, project contacts, and an opportunity to sign up for email alerts.

Many transportation agencies are becoming more sophisticated in making residents part of the decision-making process. In Baldwin Park, California, in Los Angeles County, the city council was determined to address the obesity epidemic among its primarily low-income children, in part by creating a more activity-friendly environment. The city applied for and received support from several health philanthropies and a federal public health grant to work on policy and systemic changes to improve the built environment for physical activity. This enabled planners at the city to create a highly collaborative process that resulted in one of the strongest Complete Streets policies in the nation, established in 2011.

The city engaged two active committees to help write a policy: the Community Task Force to represent resident’s interests, and the Partners Task Force, consisting of officials, transportation professionals, and representatives from the school district. Members of both Task Forces then took part in a community design charrette to create a plan for converting five major city corridors into more ‘complete’ streets. This activity set the groundwork for multidisciplinary participation in the Complete Streets Advisory Council, which was appointed by the city council and now oversees implementation activities. Members include members of the very active Baldwin Park Residents Advisory Council, a local health group, the school district, and representatives from the city’s Public Works, Planning, Policy, and Parks and Recreation Departments. The Council meets quarterly to review and provide recommendations on all upcoming street projects and submits a quarterly report to the city council evaluating progress. The city has also sought input from the Baldwin Park Residents Advisory Council as it has worked to adopt a new design manual based on the Model Design Manual for Living Streets template.

Residents’ input is essential in Complete Streets initiatives. The Baldwin Park effort was assisted by the long-term, capacity-building support of a grant from a private health insurer. In the Upper Peninsula of Michigan, support from a public health grant allowed the Sault Ste. Marie Tribe of Chippewa to engage in transportation planning, working for sidewalks and transit access for youth and older adults who live in the region’s small cities. Boston used neighborhood walks funded
Case study: Rochester, Minnesota

In Rochester, Minnesota, the planning department led the initial Complete Streets efforts for the city, which provided a good base for implementation. Rochester is the center of Minnesota’s second largest metropolitan area, with a population of just over 100,000. The city received funding from Blue Cross and Blue Shield of Minnesota’s Active Living program to support its Complete Streets policy development process, and the deliberate and collaborative process involved a wide variety of stakeholders in writing tailored policy language. In March 2009, City Council unanimously approved a city policy, a revision to the comprehensive plan, and amendments to the city’s zoning ordinances during a single Council meeting, bolstered by supportive testimony from the general public.

Implementation planning
The Planning and Public Works Departments have split the responsibility for implementation, with Public Works taking responsibility for changes needed to existing streets and the Planning Department looking for opportunities to include bicycling, walking, and public transportation infrastructure in new developments and new streets. Rochester does not have any formal Complete Streets citizen or internal committees, preferring to integrate new practices with existing procedures. However, the close collaboration between the two departments that marked the initial efforts has waned somewhat in implementation. The departments are located in different buildings and no longer have regular meetings to bring them together. Assistant Planning Director Mitzi Baker reports she is reaching out to Public Works to re-establish more regular contact.

Process change
The Planning Department, which serves both the city and surrounding Olmsted County, has focused on working the Complete Streets approach into a wide variety of documents and plans. The City adopted a Bicycle Master Plan in March 2012, and has made changes to its Comprehensive plan. Their next major effort is a new Downtown Master plan that will include targets for reducing single occupancy vehicle use and increasing bicycling, walking, and transit use in the downtown core. The city would also like to establish a Transportation Management Association for the downtown region.

Public Works has been including bicycle and pedestrian infrastructure in a variety of projects, most commonly by changing striping patterns to include bike lanes. The agency has completed some road conversions, and is working with the Minnesota Department of Transportation (DOT) on Complete Streets designs for state roads that go through the community.

Design manual
Rochester uses existing national manuals, and tends to rely more on the American Association of State Highway Officials (AASHTO) Policy on Geometric Design of Highways and Streets, a national manual, than on more-restrictive state documents. Planners and
engineers from Rochester have kept up with their state DOT’s work to revise its restrictive State Aid standards. While a conflict arose recently about a specific striping pattern for a bike lane at an intersection, in general the city has not seen a need to create its own design manual.

**Training and education**

For internal training, Rochester has relied on a variety of workshops provided by outside experts, including a Complete Streets policy development workshop. The state DOT offered its Context Sensitive Solutions workshop in Rochester, and the city hopes a new DOT Complete Streets training will also come to the city. Planning and public works staff attends professional meetings and take advantage of webinars to remain versed in best practices. The Public Works employees regularly discuss Complete Streets treatments among themselves during regular project management meetings.

Public outreach and engagement is handled primarily by Planning and includes work with outside partners, including the non-profit group Our Neighbors on traffic calming projects, and the Rochester Area Foundation on identifying gaps in the bicycling and walking networks. The City also launched the ‘See, Safe, Smart Rochester’ campaign to promote safe behavior by bicyclists, pedestrians, and motorists.

**Performance measures**

While ambitious goals are being set in planning documents, such as a significant reduction in vehicle miles traveled by 2030, they have not been translated into specific performance measures. They are not yet included in the day-to-day work of the agencies responsible for transportation planning and design. However, the basic data needed for such measures are coming together: Public Works tracks the number of bike lanes and sidewalks each year; the impact of traffic calming treatments on speed; and transportation crash data. The Planning Department is tracking change in infrastructure over time, as well as the proximity of households to transit, walking, and bicycling facilities. In the fall of 2012, the city piloted a Minnesota Department of Transportation bicyclist and pedestrian count methodology, with hopes to begin collecting this data twice a year in the future.

Since streets cross over jurisdictional boundaries, institutionalization of a Complete Streets approach is easier if neighboring and overlapping jurisdictions share a commitment to multi-modal accommodation. In Rochester, the Planning Department serves both the city and Olmsted County, but the city’s acceptance of Complete Streets has not yet been replicated by the county. The County received a public health grant to explore a variety of options to improve the built environment for physical activity and subsequently launched several multimodal projects in 2010. Rochester’s progress has already paved the way for policies in a number of smaller communities in the county, including Eyota, Stewartville, and Byron. The city has gained support for its approach from the regional planning organization, the Rochester-Olmsted Council of Governments, which adopted Complete Streets in May 2011. Minnesota’s statewide Complete Streets law has resulted in concrete assistance in the form of the non-motorized data collection project, training programs, and close collaboration on projects on state-controlled roads.
Leveling the playing field

Once a community agrees to pursue types of projects, someone is bound to say, “We can’t do that.” A key to changing processes is to dig deeper and discover what rules, habits, and assumptions underlie a barrier. Some communities are doing this systematically, by reviewing all documents and processes that might affect transportation decisions and identifying text or points in the process where all users are not currently considered or where auto-mobility is prioritized. From here, communities can modify or abandon those barriers to ensure Complete Streets outcomes. Having high-level direction to do this work is often helpful in ensuring it is done. For example, the Seattle Complete Streets ordinance required a review of “…the Department’s Transportation Strategic Plan; Seattle Transit Plan; Pedestrian and Bicycle Master Plans; Intelligent Transportation System Strategic Plan; and other [Seattle Department of Transportation] plans, manuals, rules, regulations and programs as appropriate.”

Most commonly, bicycle, pedestrian, and public transportation facilities are simply not in some plans and manuals. In order to provide project teams with the appropriate tools needed to plan and design streets, these types of facilities must be included wherever appropriate. In Kauai, proposed new subdivision ordinances will require developers to include sidewalks and connected streets. Other communities have launched pilot projects and, in the course of working on them, discovered issues that need to be fixed in a variety of documents and manuals. For example, a proposal to add sidewalks and crossings might: trigger a review of storm water run-off standards; conflict with outdated zoning codes; raise questions about who will pay for the sidewalk or its maintenance; and affect measurements related to vehicle throughput (see Level of Service discussion on page 17). In each case, the guidelines for each question should be reviewed and revised if possible.

In Rochester, Minnesota, the Complete Streets initiative has focused on systematic change to guiding documents. When it approved a Complete Streets policy in spring of 2009, the City Council amended the city’s Land Use Plan and Comprehensive Plan to reflect a more multi-modal approach. Since then, the city has written new Downtown Design Guidelines and a Downtown Master Plan and Mobility Study. The new plan establishes goals for reducing single occupancy vehicle travel and increasing walking, bicycling, transit use and carpooling. Most recently the city completed a new Bicycle Master Plan.

One important strategy for creating a more balanced system is to ensure that maintenance and operation procedures look beyond the automobile. Commonly, the only criteria for selecting and designing these projects is pavement condition and keeping costs low; there is no time or money
devoted to finding ways to use these projects for a more multimodal design. Such projects, usually carried out by the public works department, are often the most important—and frequent—opportunities to quickly create change within communities, since larger construction and reconstruction projects may take years to plan.

Many public works departments are now reviewing the striping of roadways following repaving projects for opportunities to incorporate bicycle lanes and clearer pedestrian crossings. In some cases these projects can expand to include adding head-out angled parking or pedestrian medians, depending on the available right-of-way. In Salt Lake City, Utah, Becka Rooff, the Bicycle and Pedestrian Coordinator, used the city’s Complete Streets ordinance to work closely with Public Works to install 50 miles of bike lanes in 2011, primarily through the city’s Pavement Management System. Even with Salt Lake’s famously wide streets providing ample opportunity for the inclusion of bicycle lanes, she scrambled to learn of upcoming projects before construction began, and then to propose new designs. The changes required public meetings, which were often difficult to organize in the short timeframe.

Communities can revise their paving plans so citizen groups and city planners can use the upcoming opportunities to suggest changes, and many are doing so. Louisville, Kentucky, is identifying state highways in the city that are ripe for lane re-configuration, so they will be ready to propose changes when the state announces plans to repave them.

Additional cost is often a concern when addressing maintenance projects under tight budgets. Changes made during maintenance and operations adjustments are often inexpensive and tied to work that is already necessary. For example, routine signal timing adjustments can also take into account the new standard for walking speed that gives folks with disabilities or older residents a few extra seconds to cross the street. A Complete Streets directive can give agency heads the support to make small adjustments to resource allocation to allow agencies to take advantage of these opportunities.

**Project selection**

One of the most important changes an agency can make to ensure that all modes receive balanced consideration is to change the way it selects transportation projects. Several techniques are discussed below; in many cases, communities will use a combination to achieve their Complete Streets goals.

**Level of service**

Most commonly, communities use Level of Service (LOS) as a primary metric for choosing and designing transportation projects. LOS ranks automobile delay on a value-laden ‘A to F’ scale, where an ‘A’ is seen as the best conditions for traffic. Such rankings were originally intended for use only on large highways, not on community streets. Many communities have made it a matter of policy to keep LOS from going below a grade of ‘C’ or ‘D’ at intersections, even during peak travel times. This often blocks the provision of more space for buses, walking, and bicycling. LOS has many limitations, not least of which is it is often the only method used to rank projects – and it assumes that a community’s primary goal is to minimize automobile delay.

Solutions include relaxing LOS standards in certain areas by allowing a lower grade at peak times; reconfiguring them to apply to off-peak travel instead of making them meet that standard at rush hour; or creating and using different types of LOS, such as Multimodal Level of Service (known as MMLOS) standards. Some jurisdictions have stopped using LOS altogether. San Francisco is
experimenting with a new citywide system of estimated Auto Trips Generated.\textsuperscript{2} The nonprofit
group Walk San Diego notes that San Jose and other California jurisdictions are relaxing LOS standards
in certain areas.

**Mode-specific plans**
Traditionally, separate transit, bicycling, and pedestrian plans have been used to identify the
highest-priority corridors for adding new non-motorized infrastructure, and many communities are
still using this technique. La Crosse, Wisconsin is just completing a bicycle and pedestrian plan
that will help increase the pace of change in that community.

Complete reliance on such plans, however, can mean that only roads that appear on the plan
are improved, leaving out important opportunities to make small improvements, such as filling
in a small sidewalk gap or improving a crossing during the course of routine repaving projects.
Separate plans for each mode may also not effectively coordinate the overlapping networks
intended to serve each mode.

Some communities are referring to a practice called “Layered Networks” in implementing Complete
Streets. This approach helps overcome some of the issues of separate, mode-specific plans by
encouraging planners and designers to consider the needs of an entire network, not one specific
corridor. Rather than attempting to accomplish the best for each user on every street, this practice
allows transportation decision-makers to prioritize modes according to safety and community
needs, while still ensuring access to destinations for all. It also encourages the creation of links for
non-motorized users where the existing roadway network makes new street construction difficult.
To implement Complete Streets, the City of Los Angeles has developed a mode-specific networks
for bicycling and transit improvements, which outline modal enhancements for particular major
streets.\textsuperscript{3} These networks are complemented by changes to citywide policies and practices related
to walking.

**Project prioritization**
A common strategy to change project selection is to create a points system that rewards
multimodal inclusion, or adjust the current system to do so. New project prioritization systems
are most common at the state and regional level. Metropolitan Planning Organizations (MPOs)
are charged with distributing federal transportation funds to the cities and counties in their region,
and the process tends to be a political one, with each jurisdiction often setting its own localized
priorities. Sometimes the process is set up in such a way that one community’s project, using a
Complete Streets approach, being passed over in favor of an auto-centric project; this is because
the project selection and prioritization criteria unfairly favor such types of projects. By changing
that process so that projects advancing multimodal needs are on an even playing field for funding,
MPOs can have a great effect on the creation of Complete Streets within a region.

The Nashville Metropolitan Planning Organization revamped the way it chose projects to include
in its long-range Transportation Plan, awarding points for projects that improved air quality, active
transportation options, physical activity, safety and equity. Under the 2010 plan, 70 percent of the
projects have some active transportation infrastructure, compared with two percent of the projects
in the plan adopted five years earlier. San Diego’s MPO requires basic accommodation in all the
projects it funds, and also encourages jurisdictions to pursue more innovative projects through
grant programs aimed at multimodal accommodation and smart growth.

The Mid-America Regional Council (MARC), the MPO for the Kansas City region, created a
sophisticated points system to select projects for inclusion in its Long-Range Transportation Plan
and its shorter-term five-year Transportation Improvement Program. Projects selected for funding must support the overarching vision of a “safe, balanced, regional multimodal transportation system that is coordinated with land-use planning, supports equitable access to opportunities, and protects the environment.” This vision was broken into nine specific goals, and MARC staff conducted an initial scoring of more than 500 submitted projects. Committees for each mode identified gaps and refined priorities and scoring, all in the context of what the region could afford; the general public had several chances to comment as well.\(^4\) Points are awarded to projects on a number of specific categories, including inclusion of all modes; placemaking; economic vitality, and safety. All projects, new and old, were subject to the new scoring system.

**Taking equity into account**

Comprehensive Complete Streets policies address the needs of people of all ages and abilities, as well as those using different travel modes. This requires another level of prioritization,\(^5\) as discussed by Kelly Clifton and Sarah Bronstein in “The Path to Complete Streets in Underserved Communities: Lessons from US Case Studies.”\(^6\) Portland, Oregon’s celebrated work to create a more multimodal network still left out a significant part of the city: East Portland, which has a higher portion of residents without good access to transportation, including children, older adults, people of color, and immigrants. The area has a median household income that is 23 percent lower than that in the rest of Portland; and residents need more, low-cost transportation options.

Portland’s bicycle and pedestrian plans prioritized projects in technical terms, funding projects that served intensive land uses, aided the highest volume of cyclists, and closed network gaps in an economical way. Clifton found that projects that were “easy” to fund and implement received priority as well. While this approach grew the physical network and encouraged more walking, biking, and transit in the central city and adjacent neighborhoods, residents of East Portland saw less attention and experienced fewer benefits. The area has proven more difficult to retrofit, because of its suburban development style, with wider, higher speed roadways and longer blocks that are more hostile to non-motorized travel. While bike lanes were added in some places, they did not serve East Portland’s high proportion of non-drivers, including older adults and children, and bicycling rates did not rise as it did elsewhere in the city.

The Portland Health Department researched solutions, forming a broad-based review committee to guide the work. The committee found that the process used to choose projects was problematic: while equity policies already existed, they were vague and not part of everyday transportation decision-making. Therefore, the next edition of the city’s Transportation System Plan will include prioritization criteria that take into account the needs of the people served by transportation project. Specifically, emphasis will be given to projects that are located in a block group with higher than average underserved populations; improve safety; reduce exposure to air pollution; and complete gaps in the transportation network.

**Creating new systems**

Often the most effective way to overcome barriers is to simply create new systems. This report discusses narrowly defined systems to establish a thorough Complete Streets exceptions process or Complete Streets project checklists, as well as efforts to create entirely new project development systems from start to finish.

**Exceptions**

Most Complete Streets policies spell out specific exceptions, such as a clear lack of need for certain facilities in the future. Successful implementation requires a system to determine when and
how those exceptions are made. Often, this is discussed during policy development, and fine-tuning of the system occurs as the community begins work. In other cases, the exceptions are described in the policy document, but not the process by which they are sought and approved.

In Rochester, Minnesota, the city policy specifies that all street construction, reconstruction, and resurfacing and re-striping projects must be evaluated for Complete Streets applicability. With the policy in place, city staff and leaders then worked to develop a robust process for ensuring implementation. The City Engineer determines the appropriate Complete Streets approach to reconstruction, resurfacing, and rehabilitation projects. An internal project review by the City Engineer, Traffic Engineer, and Director of Public Works ensures compliance with the policy or, in some cases, approves technical exemptions. The Public Works Department provides the Council with basic information about all upcoming projects. Public involvement meetings, made more common as part of implementation, inform community members and leaders of proposed road design and safety solutions. If significant opposition is expressed during these meetings, the project is taken to City Council. City Council has the final authority on exceptions, though, to date, the Council has approved only one exception.

**Checklists**
A common first technique used by many jurisdictions is the creation of checklists that remind or require planners and engineers to consider the needs of all users as they go about their work. A checklist approach can help provide appropriate solutions based on transportation and land use needs, and can be used to collect and share information between departments and with the public. Checklists can ensure that, from scoping to construction of a project, project managers and designers have considered and appropriately accommodated the needs of all users.

The Mid-Ohio Regional Planning Commission, the MPO for the Columbus, Ohio area, established a comprehensive questionnaire that leads member jurisdictions through each factor they should consider in planning and designing a road system for all users. While called a “checklist,” it goes beyond simply marking boxes by providing space to include data about the existing roadway and the goals for its improvement. The document covers everything from scoping to public input, and has functioned as a teaching tool for transportation professionals and community leaders.

Hennepin County, Minnesota, developed a checklist that is now applied to all projects. The checklist covers existing and proposed features of the roadway; intersections; utilities; bicycle and pedestrian facilities; and presence of transit. It also asks about features along the roadway, such as schools, fire stations, and parks. Project managers use the checklist at the beginning of the design process on street reconstruction projects and update it as the project evolves. The County’s diversity of roads—350 of which are classified as urban and 223 as rural – demands a context-specific approach. The extensive checklist helps provide this needed measure of flexibility. The document continues to evolve, as it is tested with each new project.

Seattle organizes its comprehensive Complete Streets implementation system around a detailed checklist that is used to collect data about the street, its surroundings, and any plans that address what the street needs. Their checklist is just one part of a more comprehensive implementation system. By themselves, checklists are usually not enough to fundamentally change transportation planning.

**New project development systems**
Communities can bring all the procedural changes together by creating an entirely new step-by-step project development process. The best known example is the six-step process created
by the Charlotte Department of Transportation in their *Urban Street Design Guidelines* (USDG). The process starts by evaluating the existing land use and transportation context of the project; moves on to identifying gaps and deficiencies and defining future objectives; then recommends a street classification; and ends with a deliberation of the tradeoffs that might need to be made. This iterative process helps city transportation staff continually revise street design to balance the needs of multiple users within the community context, honing the design until those needs are best met. The USDG includes a detailed discussion of how each step works in practice.\(^7\)

Charlotte’s planners and engineers apply the process to all plans and projects that could affect existing streets or result in new streets, including: area plans, streetscape plans, neighborhood improvement plans, development proposal reviews, and preparation of the Capital Improvement Plan. Area planning, in particular, benefits from the process, as it provides the framework necessary for integration of land use and transportation on a larger scale. The scope and complexity of any project directly influences the complexity of the corresponding six-step process and the degree of public involvement.

By starting with an evaluation of existing conditions, this process prevents project managers from jumping straight into a presumed treatment or solution; no assumptions about the type of roadway or its facilities are made. The final step, the discussion of tradeoffs, makes explicit that there must be room for the inevitable push and pull of balancing the needs of different users.

Other places that are revamping their fundamental procedures include Tacoma and Seattle, Washington; Arlington, Virginia; and Rochester, Minnesota.

Several jurisdictions have explained their new project development systems or steps as part of new Complete Streets handbooks or manuals. Chapter three of Charlotte’s *Urban Street Design Guidelines* is a great introduction to this approach; the North Carolina Department of Transportation’s *Complete Streets Guidelines* expands on that six-step system. Other manuals with extensive discussions of decision-making systems include Dallas’s draft *Complete Streets Design Manual* and Chapter six of Boston’s *Complete Streets Guidelines*.

In the Chicago area, the non-profit organization Active Transportation Alliance developed a model design manual, *Complete Streets, Complete Networks* with a strong emphasis on process. The manual suggests the creation of new street typologies defined by both the users of the street and the surrounding context. The final chapter details a two-phase process for using the new typologies and supports each with a checklist. The manual is intended for use by communities across the nation, but has a specific emphasis on those in Chicagoland. In 2012, it won an award from the Illinois Chapter of the American Planning Association.

A systems approach also means updating relevant plans that guide community development and growth, such as the comprehensive plan; transportation and mode-specific plans; and subdivision and zoning ordinances. These documents often provide the backbone for project selection and preliminary ideas about context and needs. Updating them to reflect Complete Streets priorities creates a unified, comprehensive, network approach from the public agency and private developers.
Case study: San Diego, California

San Diego County, which includes the city of San Diego and 18 other jurisdictions, has a simple Complete Streets policy that was approved by voters, has been backed by experienced supporters and agency professionals, and is rooted in a transportation funding provision. These qualities have helped the region become a leader in Complete Streets implementation for its three million residents.

San Diego County’s Transnet ordinance, a half-cent sales tax renewed by more than two-thirds of voters in 2004, states: “All new projects, or major reconstruction projects, funded by revenues provided under this Ordinance shall accommodate travel by pedestrians and bicyclists.” The Transnet measure also dedicated two percent of its revenue to each of two new funds: a Pedestrian and Neighborhood Safety Program, and a Smart Growth Incentive Program. All of Transnet funds are administered by the San Diego Association of Governments (SANDAG), the regional governance body that also distributes federal transportation dollars as the metropolitan planning organization.

A number of jurisdictions within the County now have their own Complete Streets initiatives, in part to comply with a state law requiring inclusion of Complete Streets in General Plan updates. The County Health Department, in cooperation with SANDAG, has helped to emphasize the public health benefits of implementing a Complete Streets approach and provided educational opportunities to these municipalities.

Implementation planning
As part of the implementation of Transnet, SANDAG established grant programs to allocate the specialized bicycle, pedestrian, and smart growth funds. The requirement to include bicycles and pedestrians in all projects, which affected a far larger share of the funds, was called the “Routine Accommodation” policy. A number of SANDAG committees were involved in writing the rules on how this new approach would work – just one of many rules governing Transnet’s implementation. Stephan Vance, now a Senior Regional Planner at SANDAG, was working on the rules, and felt the implementation should be as specific as possible. He proposed a matrix, clarifying what types of facilities would be required for urban highways, transit projects, urban streets, collector streets of higher and lower design speeds, local streets, and rural roadways. The draft rule also specified exclusions in cases of excessive cost or demonstrated lack of need. The county’s Bicycle Pedestrian Advisory Committee, and other committees with representatives from planning, Public Works, and traffic engineering all contributed to the creation of the rules. The final rule allows jurisdictions to use their bicycle and pedestrian plans as a guide, as long as SANDAG has approved the plans. Some officials on SANDAG’s Board expressed reservations about the strength of the rule, but Vance says the fact that the provision is part of a measure approved by such a large majority of voters helped convince them to support it. The rules were passed in 2008.

Training and education
The nonprofit organizations WalkSanDiego and the San Diego Bicycle Coalition have brought a range of educational and training opportunities to the County. The staff and leadership of WalkSanDiego include knowledgeable planners who have worked in close partnership with SANDAG. They have brought nationally recognized transportation experts to the region for...
daylong workshops and forums, and arranged two Complete Streets workshop for agency staff, citizens, and other stakeholders from jurisdictions interested in furthering their own Complete Streets work. Walk San Diego has issued two detailed, carefully researched reports on Complete Streets implementation. *Safe for All*, a benchmark study of street design practices in the jurisdictions in the county, includes Complete Streets case studies and best practices from communities locally and across the country. *From Policy to Pavement: Implementing Complete Streets in the San Diego Region* provides a full implementation toolbox and discussion of barriers for local communities.

**Process change and design manuals**

SANDAG, as a funding agency, does not actually build projects, but it provides incentives and technical support to help communities create more inclusive projects. The agency published two design guides, *Planning and Designing for Pedestrians* and *Designing for Smart Growth*, and has provided other supportive materials, such as a series of photo simulations showing the evolution of Complete Streets implementation. The matrix included in the Routine Accommodation rule has been used by local jurisdictions without significant oversight by SANDAG. While projects have definitely become more inclusive, Walk San Diego’s benchmark survey in 2011 found that most jurisdictions were still using street design manuals with a traditional focus on traffic volumes and ‘functional classifications’ that classify roads by a single metric of automobile traffic capacity. However, several jurisdictions are prioritizing street improvements to meet land use and Complete Streets goals.

SANDAG is responsible for regional transportation forecasting to determine future transportation needs. It is moving to ‘Activity Based Modeling,’ which focuses on modeling all the types of trips (to school, to the store, etc.) that people take during the day, not just trips to work. It will be better able to predict non-motorized travel than traditional models that rely on less individualized trip generation data.

**Performance measures**

As with so many other jurisdictions, establishing new performance measures have not been a high priority for the San Diego region, but that is changing. The Regional Transportation Plan includes specific goals for bicycling and walking and transit use, mainly due to the requirement to meet specific targets in AB 32, the state greenhouse gas emissions law. While these goals have not yet been converted into specific performance measures, Andy Hamilton of Walk San Diego believes they will eventually put the region “on the hook,” to make the connection. Stephan Vance also expects that measures related to physical activity and health will be developed as part of the region’s participation in major public health initiatives. Unlike other places, the region does have a long, if uneven, experience collecting basic data about where and how many people bicycle and walk; a state study of counting methodologies and outcomes even used San Diego as a case study.

Most recently, a grant helped purchase 60 ECO counters that automatically count and collect the number of people who are walking and riding bicycles using special sensors. Vance says the next step is finding the funds to maintain the system.

SANDAG is planning to start collecting project-level data on success by requiring communities receiving funding from their pedestrian/bicycle grant program to count the number of people
on bicycles and who are walking along the corridor before the improvement, with SANDAG responsible for taking counts once the project is completed.

Projects
The city of San Diego is a good example of how a Complete Streets approach has led to projects large and small, with clear benefits. The city launched a complete remake of La Jolla Boulevard in the business district of Bird Rock, installing new roundabouts and other features to improve safety as well as making extensive improvements to the streetscape. A survey of tax receipts among 95 businesses along the corridor showed a 20 percent boost in sales. Numerous new businesses opened during construction, including a CVS with a 40-year lease, indicating optimism for Bird Rock’s long-term economic viability.

Small improvements are made as well. The addition of a mid-block crossing on Adams Avenue, to connect the University Heights neighborhood to Trolley Barn Park, cost only $20,000, and it provided residents in a lower income neighborhood safe access to their only park. Hamilton said the project “made a huge difference calming traffic for two blocks, giving a whole neighborhood better access to its park.” Another project at the 50th and University Avenue intersection came in at just $4,500, and enhanced safety and calmed traffic through paint and a few bollards.

Next steps
Complete Streets supporters in San Diego recognize that the one sentence in 2004’s Transnet ordinance does not represent a full Complete Streets vision. The latest planning document calls for creating a more robust approach; Vance has been charged with leading that effort. He notes that communities are beginning to use their mainstream funds for projects such as road diets, rather than using the special grant programs. Hamilton notes that citizen expectations are driving the process. “It is surprising the degree to which, when you ask, people say they want a walkable, bikeable, transit-friendly community. And then the cities have no way to deliver that, so they have to look internally and go ‘huh, okay, now what do we need to do?’” Walk San Diego expects to work with more local jurisdictions as they implement Complete Streets. Both Hamilton and Vance note that regional leaders have embraced Complete Streets as one avenue to help meet goals to increase physical activity and reduce greenhouse gas emissions. These goals are aligned with citizen desires: a poll of residents in 2010 found that 79 percent of respondents support creation of walkable neighborhoods as a greenhouse gas reduction strategy. The drive to meet the goals set to comply with AB 32, a state law concerning climate change mitigation, will likely spur greater action toward creating streets that are truly safe for all.
Resources: Changing the way decisions are made

Checklists
c) Complete Streets Checklist for Project Sponsors, Mid-Ohio Regional Planning Commission (Columbus, Ohio region): http://www.smartgrowthamerica.org/documents/cs/impl/oh-morpc-checklist.pdf
g) Complete Streets Checklist, Metropolitan Transportation Commission (San Francisco region): http://completestreets.mtc.ca.gov/

Plans
a) Transportation Outlook 2040, Mid-America Regional Council (Kansas City, Missouri region): http://www.marc.org/2040/
b) Transportation Improvement Program 2012-2016, Mid-America Regional Council (Kansas City, Missouri region): http://marc.org/transportation/tip.htm

Funding priority systems
a) Project Solicitation & Evaluation: Scoring Criteria, Mid-America Regional Council (Kansas City, Missouri area): http://www.smartgrowthamerica.org/documents/cs/impl/mo-marc-evaluation.pdf
b) Local Aid Program, New Jersey Department of Transportation: http://www.state.nj.us/transportation/eng/completestreets/implementation.shtm

**Process flowcharts**

a) *Complete Streets Complete Networks*, Active Transportation Alliance: atpolicy.org/design


**General**


III. Reviewing and updating design guidance

Common activities:
- Writing or rewriting street design guidelines
- Choosing existing guidance documents that reflect national best practices
- Updating subdivision and zoning codes
- Applying street design guidance to public and private projects

In many agencies, the highway design manual is the go-to reference for all transportation projects. Its revision to be supportive of multimodal efforts often receives the lion’s share of attention when it comes time to implement a Complete Streets approach. An outdated design manual is often seen as the most significant systematic barrier to creating a healthier street environment. Because most manuals still focus primarily on automobile travel, many state agencies require local governments using state funds to obtain variances when they propose designs that are typical Complete Streets solutions—such as narrower lanes and road conversions—because the state manuals do not support such designs. A flexible manual can help develop design solutions that balance the needs of people driving cars or commercial vehicles, people who are riding public transportation, people on bicycles, and people who are walking.

At the local level, subdivision codes that apply to private development can also have an outsized influence on Complete Streets implementation. Under these standards, developers must conduct traffic-impact studies and mitigate their impact, but usually without consideration of other travel modes. This can result in auto-oriented streets near new schools and senior centers, where the developer only funds the development of automobile facilities. The local community is left with “incomplete” streets and must then foot the bill to retrofit the street later. Developers may resist the Complete Streets approach, and without code language, the jurisdiction may be unable to require compliance.

Choosing an approach
Nailing down exact design specifications is less important than achieving clarity in how design decisions will be made. A focus on design specifics to the exclusion of the bigger vision and process can slow down the change process, heighten resistance from old-school engineers, and make change seem insurmountable. For example, in Hawaii, the temporary Complete Streets Task Force appointed following passage of the state’s Complete Streets law became overwhelmed by design specifics. The Task Force finally set them aside, but this left little time during their six-month tenure to find ways to really begin to change the process in the Department of Transportation. Progress ground to a halt. Since that time, decision-makers and community leaders have repeatedly urged the Hawaii Department of Transportation to do more to integrate a Complete Streets approach into their work. In contrast, in Kauai County, an inclusive and ongoing Built Environment Task Force focused first on building an understanding of the problem and the range of solutions, and is now successfully addressing design specifics.

While many communities assume they must re-write their design manuals, such re-writes can also be expensive and time-consuming. Sometimes, they still may not be enough to change the everyday workings of an agency. Louisville, Kentucky, created one of the first Complete Streets-focused design manuals, to much fanfare. Yet, the manual has not been well used since then. Dirk Gowin, the Transportation Planning Administrator, reports that the Public Works Department
found the manual’s specific cross-sections too prescriptive. He also notes that since the manual’s completion in 2007, the state of the practice has advanced considerably, progress that is not reflected in the manual’s pages. He wants to start over.

No matter which approach a community chooses, it should incorporate the design guidance used on city-initiated projects into the review and approval process for streets modified or built by private developers. Doing so ensures that the entire transportation system is aligned with the jurisdiction’s Complete Streets vision.

Rewriting manuals
A number of agencies have undertaken a complete re-writing of their manuals, usually in an extended process that may also help the agency achieve two other steps to Complete Streets implementation: working out new procedures and training personnel. Kauai County, Hawaii and the City of Boston have been writing new manuals one chapter at a time. Kauai has used the Model Design Manual for Living Streets as their template. The deliberate process of tackling one topic at a time has helped community members understand the basics of the transportation planning process, while giving practitioners time to become more comfortable with the changes that will need to be made. In Boston, the writing process has become their education process. Director of Policy and Planning, Vineet Gupta, says the process has allowed people from different departments to work out differences, such as how much room a tree box really needs in a constrained right of way.

The most innovative new manuals go beyond cross-sections to create new ways to tackle the connection between land use and transportation needs. These documents create new street typologies that provide greater nuance than is available through the traditional functional classification system, which defines roads exclusively by their function for automobiles. Many require defining streets in relation to the surrounding land use, sometimes using a model called the transect, a system that divides land use into zones ranging from rural to densely urban. Nashville’s Major and Collector Street Plan uses this approach, first categorizing the environment surrounding the roadway according to its transect zone, then adding an understanding of the way the street is used for transportation, and finally assigning a design type to the street. Recently, the City of Chicago worked with expert consultants to develop a new design approach, with streets defined by their priority travel mode and surrounding neighborhood context. In spring 2013, the city formally adopted Complete Streets Chicago: Design Guidelines, just a few weeks after announcing a new organizational structure that supports those design directives by breaking down barriers between mode-specific planning.

Alternatives to rewriting the manual
Some places, such as Rochester, Minnesota, do not have their own design manuals, preferring to use a variety of national or state resources, with decisions on design specifics guided by local planning documents that make clear the outcomes desired for each corridor. By referring to outside manuals, these communities do not need to worry about using their time or resources to keep specific design parameters in alignment with the most recent best practices in the field. Instead, they can select from the latest resources that best reflect their communities’ context. Boulder, Colorado, also uses this approach. Even in communities with their own design manuals, transportation staff will refer to national or state resources in addition to their own. Such resources include Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice, from the Institute of Transportation Engineers; the Urban Bikeway Design Guide from the National Association of City Transportation Officials; Complete Streets Complete...
Networks: A Manual for the Design of Active Transportation; and the Model Design Manual for Living Streets. The latter two resources are freely customizable and adoptable by agencies across the country.

At the national level, transportation researchers and high-level transportation officials and practitioners are working to update guidance on traffic control devices and signage to allow easier use of elements such as painted bike lanes and bicycle-specific traffic lights. Additionally, guidance issued by the American Association of State Transportation Officials (AASHTO), which is generally modified somewhat by individual state departments of transportation to reflect statewide needs, is updated to reflect best practices in roadway design. However, such updates can be infrequent and take several years to accomplish. The guidelines listed in the above paragraph meet the minimum standards for safety and flexibility set in AASHTO documents. Many communities that implement Complete Streets find most success in fully exploring the flexibility allowed by AASHTO documents.

Some places have taken a more project-level approach to design changes, trying out new approaches and keeping those that work. The exurban town of University Place outside of Tacoma, Washington, prefers to design its street projects through community design charrettes. Design standards are not in the room during these events; citizens and experts alike are encouraged to use fresh thinking. New York City’s Complete Streets-friendly design manual does not answer all the questions. Instead, it encourages project managers to try new designs and context-appropriate solutions, selected through often-extensive public outreach and numerous meetings with community stakeholders. The city also has been a leader in installing temporary treatments and monitoring how they work before making the changes permanent. In these communities, traffic counts, crash analysis, and other measures are used to constantly evaluate the performance of the new infrastructure. New York has produced an accessible report about this effort, called Measuring the Street: New Metrics for the 21st Century.

Case study: Boston, Massachusetts

The City of Boston began its Complete Streets initiative in 2009. Mayor Thomas Menino had supported efforts to improve bicycling when city staff approached him about expanding that focus toward Complete Streets. He appointed a Complete Streets Advisory Committee in the fall of 2009 to develop a more inclusive approach to the planning and design of the city’s transportation network, with the explicit goal of creating new design guidelines. The city’s public health community has become an important ally in working with residents on the benefits of a new approach to street design and helping transportation staff understand community needs.

Implementation planning

The city has not developed a formal implementation plan or policy document to kick off the Complete Streets initiative. Instead, The Transportation Department has taken a more gradual approach, bringing together all the relevant stakeholders. The expected end of the process will be the signing of a Complete Streets Executive Order by the Mayor, and formal adoption of new Complete Streets Guidelines. Gradual does not necessarily mean slow, though. The Mayor’s strong support for the initiative has created considerable momentum. Boston has both a citizen-led Advisory Committee and a high-level Interagency
Group working toward Complete Streets implementation. The Group includes high-level representation from the commissions that address the needs of older adults and people with disabilities and agencies responsible for everything from water and sewers to redevelopment. Specifically the interagency group includes the Boston Transportation Department, Public Works Department, Mayor’s Office of New Urban Mechanics, Environmental Department, Environmental and Energy Services Cabinet, Redevelopment Authority, Parks and Recreation Department, Boston Bikes, Public Health Commission, Commission for Persons with Disabilities, Commission on the Affairs of Elderly, Water and Sewer Commission, Department of Innovation & Technology, and Office of Budget Management.

Boston has organized its Complete Streets work around the gradual development of a new set of street design guidelines. This could have become a technical chore where staff or consultant experts simply wrote and presented new street cross-sections and other elements. Instead, Boston has used the development of the guidelines as an organizing framework for changing the culture of not only the transportation agency, but also of the entire city government, its transportation consultants, and the citizens who use the streets. Each agency in the Interagency Group has worked on the portions of the Guidelines that affect their area of responsibility.

Process change and design guidelines
Perhaps the biggest change to the way things are done in Boston has been the broadening of the decision-making process to include all the agencies that have some impact on the streetscape. The city’s already strong public involvement process was strengthened as well. The city has not established a formal exemption process for when a road project will not include provisions for all users; instead, the community members must sign off on final street design decisions and can reject provisions. The Transportation Department provides extensive educational opportunities for community members about the benefits of Complete Streets, including general presentations, and web-based documents; neighborhood walks, and project-specific websites, presentations and updates. This nurtured the development of a group of residents who support a multimodal approach and are well-versed in transportation.

Policy and Planning Director Vineet Gupta says, “It was never the situation in our mind that one day you did not do Complete Streets and the next day you did. As different standards are suggested, they may be adopted or become matter of practice at different times. The Complete Streets philosophy has to be ingrained at staff level through cultural change.” That culture change is taking place first through the many meetings to work out the specifics of the guidelines. Then, the changes become ingrained as each guideline is put into practice. This approach has gradually incorporated Complete Streets into the day-to-day work in the City of Boston.

Several draft chapters of the city’s Complete Streets Guidelines have come into use since mid-2011 and have been referenced in construction contracts. The final Guidelines are to debut in 2013. They put an equal emphasis on “Green,” “Smart” and “Multimodal,” elements. Green strategies are aimed at making the street sustainable and low maintenance; and smart elements include technologically advanced signals, smart parking meters, and the like. To help achieve the multimodal goals, the guidelines include Multimodal Level of Service analysis system and a number of innovative design features.
The Guidelines are organized according to design-focused chapters, including street types, sidewalks, roadways, intersections, and curbsides. While the sidewalk and roadways chapters begin with charts giving suggested widths for different contexts, most of the guide is short on numbers and long on engaging graphics. Flexibility is a key principle as the guidelines address everything from vegetated stormwater management to paving treatments to transit accommodation at intersections.

The final chapter addresses implementation. A flowchart shows the development process for city-, developer-, and state-run projects, as well as where the public can have a say on each step of the way. A separate section addresses maintenance projects, including the tricky issues of coordinating with utility work and dealing with snow. But the chapter’s first graphic is eye-opening, labeling all the elements of a busy urban streetscape—from planters to crosswalk markings—with the agencies responsible for their development and upkeep: the complexity of the system hits home. Mayor Menino is committed to coordinating the work of all of the agencies.

Training and education
The gradual, inclusive approach to writing the guidelines has proven to be an important educational opportunity for both the members of the Public Works Department and the Planning Department. One example is in the discussion of minimum and preferred sidewalk widths. The draft guidelines called for a five-foot clear zone for walking; sidewalks also needed additional space to accommodate tree boxes and street furniture. “The issue was that there are many existing sidewalks that are seven feet wide, and their [Public Works] argument was, we don’t want to move the curbline.” Gupta recalls, “That’s interesting, because typically a tree box needs to be three feet wide. We did lots of to-ing and fro-ing on that front with the Parks Department that managed the tree boxes, and the Public Works Department that reconstructs sidewalks. We encouraged the detailed discussion on these issues, because it means in the future it won’t just be on a piece of paper, it will be something people have experience with.” The draft guide includes varying widths for planting areas, depending on the neighborhood context of the sidewalk, as well as a 12-page section on innovative practices for integrating trees into the streetscape.

Boston transportation staff report that they “didn’t think about public health at all” when beginning their Complete Streets initiative. However, public health came to have a big influence. The Public Health Commission and the Transportation Department co-hosted three neighborhood walks, led by renowned walking expert Mark Fenton. For each, Fenton began with a presentation about the importance of a walkable environment and routine physical activity to health, and then led the walk. The walks were linked to an ongoing street improvement project so residents could see progress. Mayor Menino attended the sessions himself, raising their profile to his staff and constituents while he also gained a clearer understanding of the relationship between health and the built environment. Gupta says the sessions were a huge boost to the Transportation Department’s efforts. The Public Health Department has also issued small grants to community groups for neighborhood streetscape projects; the city has worked closely with those neighbors.

Performance measures
The agency has not tackled the issue of developing new performance measures for the city, but plans to do so in the spring of 2013.
Resources: Design guidance

National guidance

g) Urban Bikeway Design Guide, National Association of City Transportation Officials: http://nacto.org/cities-for-cycling/design-guide/
h) Model Design Manual for Living Streets: http://www.modelstreetdesignmanual.com/
i) Complete Streets Complete Networks, Active Transportation Alliance: http://www.atpolicy.org/Design

Agency-specific guides

c) Active Design Guidelines, New York City: http://centerforactivedesign.org/guidelines/


m) Design Guidelines for Active Michigan Communities, Michigan Department of Community Health: http://www.mihealthtools.org/communities/default.asp?tab=designguidelines

n) Complete Streets Guidelines (draft), Boston: http://bostoncompletestreets.org/

IV. Offering training and educational opportunities

**Common activities:**

- Host Complete Streets workshops for agency staff and consultants, with auxiliary sessions for community leaders and the public
- Take advantage of professional development opportunities and webinars offered by the state Department of Transportation, Metropolitan Planning Organizations, professional organizations, and transportation non-profits
- Provide on-the-job training for agency staff, including informal and interdepartmental activities such as brown bag lunch presentations
- Lead walking audits and bicycle rides for decision-makers, agency staff, and the public
- Engage the community through formal public engagement activities and project-based meetings

A major component of implementing Complete Streets is in education— and it is about far more than helping engineers learn how to incorporate bicycle and pedestrian facilities into road projects. Planners, engineers, consultants, and other agencies need a thorough understanding of new procedures. Officials should receive ongoing education to understand how the general Complete Streets goal will be translated into built projects. Educating the public about options they can consider for their streets, and what is happening to their roads, is essential for successful implementation. The public may have supported the overall goal, but residents will have more questions when the project is on their street. This section looks at education opportunities for each group.

Public health has an important role to play in the educational process. Many public health agencies have been sponsors of workshops, webinars, walking audits, and other activities that have been essential in bringing transportation professionals, decision makers, and ordinary citizens together to discuss and learn about Complete Streets.

**Transportation professionals**

Many communities bring in outside experts to facilitate a workshop for employees and other stakeholders on details of Complete Streets and how to best apply the approach locally. Many have hosted one of the National Complete Streets Coalition’s Complete Streets workshops, while others have hired independent consultants to run trainings. These trainings are aimed mainly at agency professionals. Outside experts should have significant experience in planning and engineering, allowing them to speak to attendees as peers and help them understand the approach and answer their questions. These workshops tend to be daylong, though some communities may choose to do a multi-day workshop to dig into implementation processes and others schedule several throughout the year. Several of the case study communities have sponsored a variety of workshops and speakers to advance the understanding of Complete Streets, most notably San Diego and Kauai, Hawaii. Much of the value in holding workshops is the new collaboration by those in attendance. Most successful workshops have attendees from various city departments, and invited a few decision-makers and interested community members. By doing so, the community can begin to establish a more inclusive decision-making process as an outcome from the workshop.
Some agencies, particularly large state agencies, have launched their own training programs for their employees. Massachusetts adopted its revamped Project Development Manual in 2006, but found years later that it still had not really penetrated all the districts. In 2011, the state created a system of dozens of 3- and 6-hour training sessions that elaborated on specific points in the manual and what they meant for planners and engineers working for the state and local agencies across Massachusetts. New Jersey and North Carolina are also conducting formal, statewide training programs.

While technical training is useful, what is more important in these sessions is for transportation engineers and planners to understand and embrace the intention behind Complete Streets, so they are motivated to make changes in their procedures, documents, and projects. They need to hear how this approach works in other communities, and how it fits into their professional goals and standards. The best messengers for these sessions are those within the same profession; engineers need to hear directly from other engineers, planners from other planners. And sometimes they just need to hear from each other.

Many agencies have also used a more informal, on-the-job training approach. Communication between departments—sometimes as simple as a conversation while walking to and from the office building—is often cited as an absolute necessity in getting all staff on the same page. Doing so also reinforces the notion that Complete Streets is not one person’s job, but everyone’s job.

Case study: Louisville, Kentucky

Louisville, Kentucky’s consolidated city-county government, Louisville-Jefferson County Metro Government, was an early leader in Complete Streets. By 2008, the city-county government had written and adopted a Complete Streets design manual, inspired in part by strong interest in active living. Though technical details were established and agreed upon during the manual’s development, there remain battles over street design.

Implementation planning
The Metro government’s initial Complete Streets efforts focused on creating the manual, engaging a broad array of stakeholders. A streetscape enhancement advisory group included outside transportation consultants and local planning staff, as well as representation from a wide array of stakeholder agencies and interests such as the Public Works department, the Kentucky Department of Transportation, the area’s metropolitan planning organization, several utilities companies, the transit authority, and citizen activists interested in compliance with the Americans with Disabilities Act (ADA) and bicycle and walking issues. The activity surrounding the manual did not prompt any formal implementation planning.

Design manual
Despite the range of voices that shaped the manual, it was not put into full use. It uses character districts to sub-classify the familiar palette of street types—arterial, collector, local, and alley/lane. The cross-sections and plan-view diagrams contained within the manual illustrate preferred roadway designs for streets in rural, suburban, traditional, and downtown contexts. Public Works staff found the specific cross-sections in the manual too constraining,
and that they are becoming dated as innovative treatments have been developed nationally, particularly for bike facilities.

**Projects**

Project-level implementation of Complete Streets requirements are often opposed by the development community in Louisville, although the Public Works Department has been somewhat successful in pursuing the inclusion of sidewalks and bike lanes, citing the Complete Streets ordinance.

Public Works has systematically added wider paved shoulders to provide minimum accommodation for those walking and biking, particularly in the course of repaving projects. However, the Metro government often learns of state plans to repave state-controlled roadways too late to pursue bigger changes such as road conversions; such a design change would require a public involvement process that can be difficult to launch on short notice.

Louisville has completed a few road conversions on its own roads, but the Complete Streets policy has not prevented controversy from arising. Dirk Gowin, the Administrator of Public Works, says one recent contentious project affirmed his belief that safety is at the core of Complete Streets success. US 42, Brownsboro Road, is a four-lane commuter route butted up against a cliff that leaves no room for a sidewalk on the north side of the road. Residents of the adjacent Clifton and Clifton Heights neighborhoods needed to be able to walk to stores, restaurants, apartments, and the Kentucky School for the Blind. A road conversion was proposed to reduce four car lanes to two through lanes and one center turn lane, creating room for the sidewalk within the existing right-of-way. An ad-hoc group of businesses and commuters worried about traffic congestion organized to oppose the “road diet,” and launched a website, www.save42.org. In response, Mayor Greg Fischer delayed the project and opened a new public comment period. Soon local walking and bicycle supporters, neighborhood residents, and the Greater Louisville Council of the Blind joined together to push for the proposed design, creating their own website, www.safe42.org.

Gowin decided to zero in on the safety message. He did an analysis of all the crashes on the corridor, and evaluated what portion of them would have been prevented by use of the proven safety countermeasures recommended by the Federal Highway Administration. He found that they could have prevented up to 60 percent of the recent crashes in the corridor, including a number of pedestrian deaths. Alternatives explored would not result in the same safety benefits. In addition, Public Works documented that the new design would delay drivers by an average of just 13 seconds. In the end, the Mayor, in partnership with the supportive local council member, issued a definitive order to proceed. The conversion was completed in August of 2012 and so far is working well. Gowin plans to keep close track of the safety record on the segment and use it to push for additional road conversions—and he's going to stop using the term “road diet” for designs such as this because “people don’t like to diet.”

Gowin is planning to launch a study to identify more corridors that are good candidates for road conversions, so the city can be ready to take advantage of future repaving opportunities. The city is also gearing up to create a new multi-modal transportation plan, which will use a more flexible matrix approach, similar to the approach used in the national design manual Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, and which will identify particular corridors to prioritize.
Community leaders
One of the greatest lessons learned is that work with decision-makers and community leaders must be ongoing. Establishing initial support for the vision of Complete Streets is essential at the beginning of a Complete Streets initiative, but that support can erode if leaders face community opposition to particular projects or do not understand the changes that are being made. Transportation staff and other stakeholders need to be able to educate and inform officials about the benefits of the proposed projects to the greater community and nearby residents and businesses, and how incomplete streets negatively affect mobility and access to schools, offices, and shops. Officials can then better address the community’s Complete Streets goals to concerned citizens, enhancing the community dialogue and sustaining the momentum.

In Minnesota, Complete Streets champions have discovered that experiential learning is a great way to create lasting support. Saint Louis Park conducted a ‘Winter Walking Tour’ for officials and transportation agency workers. National expert Mark Fenton led the group on a walk down snowy city streets so everyone could experience the barriers presented by mounds of snow that block access to buses or reduce sight lines; slick surfaces that imperil older pedestrians; and other hazards. The city also sponsored a bike tour with Council and key Department leaders, using principle bike routes. Both events built a common experience; the city council continues to refer back to the experience during its decision-making.

General public
The biggest communication challenge many communities face is upon the implementation of the first project that begins to reallocate space to make room for users beyond automobiles, such as a road conversion or a project that would remove automobile parking in order to provide for a bicycle lane.

Louisville, Kentucky ran into stiff opposition to a conversion on Brownsboro Road, a four-lane commuter route that butted up against a cliff on the north side – leaving no room for a sidewalk. The project, termed a ‘road diet,’ converted the road, also known as Route 42, to two through lanes and one center turn lane – creating room for the sidewalk. When commuters balked, going so far as to create their own website, ‘save42.org’, the Public Works Department analyzed the crash types along the road and determined that 60 percent of them could have been prevented with the safety measures included in the project. Residents then jumped in, creating a counter website, ‘safe42.org,’ that included a video explaining road diets. After the community heard from those concerned about the project and was educated about its benefits, the project was approved and completed in the summer of 2012.

In Colorado Springs, Colorado, and Rochester, New York letters now go out to everyone on a street explaining an upcoming project and the benefits of a Complete Streets approach. In
Colorado Springs, if the project includes plantings, they offer residents the chance to pick the trees to be planted in front of their house.

Many communities have brought in experts to make presentations, facilitate workshops, and lead walking audits to educate the community about the benefits of Complete Streets; some have created their own Complete Streets web pages and a number have produced sophisticated short videos that focus on the health, economic, and safety benefits of changing street design.

Case study: La Crosse, Wisconsin

The city of La Crosse, Wisconsin, was able to leverage external events and resources as it created a unique Green Complete Streets ordinance. Implementation has been slow, but the city is continuing to develop and find resources to move toward full implementation.

Efforts in this city of 50,000 on the western border of the state began with the County Health Department, which received a public health grant in 2010 and named Complete Streets initiatives as a goal of the grant. Jack Zabrowski, hired by the Health Department through the grant to serve as Bicycle Pedestrian Coordinator, latched onto a statewide initiative: a series of workshops being sponsored by the state Department of Transportation (DOT) to publicize the new state Complete Streets law. “We kind of co-opted it. I made sure about 200 people came to the event they had, and we talked about what we wanted to do,” says Zabrowski. “Having that first initial splash, it helped that the DOT was there, saying we are going to do this, too. Looking back, that was the wholesale change moment.”

The county passed a Complete Streets resolution in May 2011, and city Transportation Director Larry Kirch, who had attended the workshop, realized that the way to bring the Public Works division on board was to connect Complete Streets to the City’s need to create a storm water utility. He had heard a presentation at the Minnesota Chapter of the American Planning Association’s conference about sustainable storm water management in which the presenter made a connection between the approaches of building ever-larger streets to move more cars and the ever-larger pipes to handle storm water. “Knowing that we had to create a storm water utility, that was the hook to get Public Works engineers to buy into Complete Streets. They had a problem they had to solve, storm water management, and we had issues about mobility, about how to move people, not just cars,” says Kirch. Selling the “Green Complete Streets” ordinance was made easier by a recent street installation right outside the City Council’s doors. “We could just point out the window: this is what Green Complete Streets look like.”

The ordinance passed in August of 2011. Zabrowski reports, “When we passed the policy the next morning I woke up and the world was still exactly the same. It was still hard to get across that street; it was still difficult to move along that street in front of my house. So it’s long-ranging policy.” The ordinance specified what departments should be involved in implementation, including the city’s Engineering Department, Street Department, Board of Public Works, and Planning Department.
Implementation planning
At a workshop focused on Complete Streets Implementation in May 2012, Kirch says the consensus was that the city needed new engineering standards and needed to create some guidance on when and how to apply them. But the ordinance did not designate a lead agency, and Kirch believes it is up to the engineers to tackle the issue of engineering standards—but to his knowledge not much is happening on that front. The city now consults a variety of design guidelines and does not have its own manual. He does expect that more changes will be made when it comes time to choose and design projects for the 2013 Capital Improvement Program.

Complete Streets supporters heard the concerns of the Public Works Department over their very limited maintenance funds, and hope to use the ordinance to help to increase funding for restriping and resurfacing. These small activities are important to long-term change and the creation of a network safe and accessible for all users. This additional funding could reduce some strain felt by the Public Works Department, and could help build their support for a Complete Streets approach.

Meanwhile, the Planning Department moved forward on a new bicycle and pedestrian plan. The plan should be helpful in providing more guidance on implementing the Green Complete Streets policy, including changes to basic street design on several streets, creating "neighborhood greenways" and implementing road conversions. Kirch also hopes to leverage two small U.S. Environmental Protection Agency grants to help city staff analyze the city's drainage basin and develop more detailed implementation steps for the 'green' part of the ordinance.

Performance measures
The La Crosse ordinance directs the collection of new data to support new performance measures, such as transportation mode shift, miles of new bicycle facilities or sidewalks, and public participation. To date, staff has not yet started the data collection or creation of the performance measures.

Both Zabrowski and Kirch felt the public health community was essential in moving Complete Streets forward. Zabrowski was able to build leadership and support for Complete Streets in La Crosse. His work has led to continued implementation efforts despite his grant-funded position having ended. Without a lead champion for these efforts or a formal implementation plan that delegates responsibility, and with continuing financial concerns, the city may be slowed in its progress.
Resources: Training and education

**Professional training: workshops**

a) National Complete Streets Coalition Workshops: http://www.smartgrowthamerica.org-complete-streets/get-help/workshops

b) Designing Pedestrian Facilities for Accessibility, Association of Pedestrian and Bicycle Professionals: http://www.apbp.org/?page=Access_Course

c) Designing for Pedestrian Safety, Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/training/pbic/dps.cfm

d) Planning and Designing for Pedestrian Safety, Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/training/pbic/pdps.cfm

e) Creating Livable Communities through Public Involvement, Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/training/pbic/clcpi.cfm

f) Complete Streets Workshops, Massachusetts Department of Transportation: http://baystateroads.eot.state.ma.us/workshops/index

g) Complete Streets Training, North Carolina Department of Transportation: http://www.completestreetsnc.org/training/

h) One Bay Area Grant: Complete Streets Policy Development Workshops, Metropolitan Transportation Commission (San Francisco region): http://www.mtc.ca.gov/planning/bicyclespedestrians/

**Professional training: Web-based**


b) Webinars, State Smart Transportation Initiative: http://www.ssti.us/ssti-events/

c) Webinars, Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/training/pbic/webinars.cfm?/webinars

d) Professional development opportunities, Institute of Transportation Engineers: http://www.ite.org/education/

e) Professional development opportunities, American Planning Association: http://www.planning.org/educationcenter/

**Professional training: Notable conferences**


b) Pro Walk Pro Bike Conference, Project for Public Spaces: http://www.pps.org/pwpb2012/

c) Professional Development Seminar, Association of Pedestrian and Bicycle Professionals: http://apbppds.org/

d) Technical Conference and Annual Meeting, Institute of Transportation Engineers: http://www.ite.org/meetings/index.asp


f) New Partners for Smart Growth, Local Government Commission: www.newpartners.org
Walking audits

a) Walkability Checklist, Pedestrian and Bicycle Information Center: http://www.walkinginfo.org/library/details.cfm?id=12
b) Walkability Workbook, Walkable and Livable Communities Institute: http://www.walklive.org/project/walkability-workbook/
c) Walkability Audits with Dan Burden and the Walkable and Livable Communities Institute: http://www.walklive.org/how-we-help/technical-assistance/
d) Walkable Community Workshops with Mark Fenton: http://www.markfenton.com/what-walkable.html

Pilot projects, demonstration events, programs, and placemaking

a) Pavement-to-Parks program, San Francisco: http://sfpavementtoparks.sfplanning.org/
d) City Repair, Portland, Oregon: http://cityrepair.org/
g) Resources for Organizers, Open Streets Project: http://openstreetsproject.org/resources-for-organizers/
h) “20 Is Plenty” program, Hoboken, New Jersey: http://www.hobokennj.org/departments/transportation-parking/twenty-is-plenty/
j) Sustainable Jersey community certification, New Jersey: http://www.sustainablejersey.com/

Public information about projects

a) Project webpages, Seattle: http://www.seattle.gov/transportation/compSt_how.htm
b) Project webpages, Boston: http://bostoncompletestreets.org/topics/projects/
V. Measuring performance

Creating new success for transportation projects, and of the transportation system as a whole, is essential if agencies want to be sure they are on the right track—and if they want to celebrate their new way of doing business. Yet, very few communities have tackled the creation of new performance measures in a systematic way.

The first challenge is defining what a community considers “performance measures.” Public health proponents want to know if Complete Streets policies have performed by getting more people walking and bicycling. Community leaders may want to see rental vacancies go down along the improved main street. Environmental organizations believe Complete Streets policies should perform in terms of lowering greenhouse gas emissions. All of these outcomes often are years removed from an actual roadway project. Even if the focus is on measuring how the street performs for those using it, defining Complete Streets success is still difficult. Most departments of transportation have traditionally measured automobile Level of Service (see page 17), pavement condition, and crashes, but have few ready-made tools or resources for broadening their focus to the quality of the travel experience for people using other modes.

Because of these realities, this step in Complete Streets implementation often lags far behind the others. Yet, there are relatively easy ways to begin to better account for Complete Streets success. Communities can measure progress by simply counting the facilities they are building, such as blocks of new or repaired sidewalks; number of bus stops with shelters; miles of new bicycle facilities; and the number of new crosswalks. Communities can measure not only new facilities, but also maintenance activities such as repairs to curb ramps and repainted bicycle lanes and crosswalks. In rural areas, the regional planning agency can aggregate this data, as the Fargo-Moorhead Metropolitan Council of Governments does with its data. Tracking such facilities demonstrates that the community is making on-the-ground changes each year, and, when compared annually, the pace of change to the built environment. When packaged and publicly available, the counts can be a key component of community education and awareness of Complete Streets.

A growing number of communities are counting the number of people walking and bicycling, a seemingly simple measure that was either never taken in the past or recorded on a more infrequent basis as part of travel diary surveys. The Minnesota Department of Transportation has established a standard methodology for simple manual counts that it is teaching to jurisdictions across the state; Rochester, Minnesota, made its first count in the fall of 2012 and hopes to count twice a year. Louisville, Kentucky, is using videotape technology to conduct highly accurate 12-hour counts. The San Diego Association of Governments (SANDAG) used public health funds to purchase sixty automated counters that use infrared sensors and electro-magnetic loops to detect pedestrians and bicycles. As this data accumulates, jurisdictions monitor developing trends in non-
motorized use overall and along certain corridors, including any changes in the ways people are traveling.

Another simple step toward performance measurement is at the project level, where data collection can show the direct and immediate benefits of a transportation investment. Such information can be especially powerful with road conversions, which typically show an immediate reduction in speeding, a dramatic reduction in crashes and crash severity, and, sometimes, an increase in non-motorized use or even user satisfaction. SANDAG now requires communities receiving special grant funds to collect ‘before’ data along the corridor; SANDAG will record ‘after’ data itself.

A health evaluator on Kauai’s Built Environment Task Force pushed the group to tackle performance measures by assigning each committee member a measure to research: where would the data come from, and what would be a reasonable measure of success? The measures selected include: pedestrian and bicycle crash rates; vehicle miles traveled per capita; percentage of students walking and biking to school; transit usage; mode share for active transportation; miles of bicycle and pedestrian facilities; and miles of street retrofits.

New York City’s Sustainable Streets Index is an excellent example of performance measurement and reporting. The Index is engaging and attractive. Large full-color photographs cover almost every page, overlaid by fascinating, accessible statistics about the transportation system. The NYC Department of Transportation reports on the basics, such as levels of driving, transit use, bicycling and walking, and on safety. The 2011 report notes that traffic fatalities dropped 37 percent between 2000 and 2011. It reports on system quality, using a unique taxi-based GPS system to report traffic congestion levels for every single day of the year. It provides detailed reports on major projects conducted in the prior year, with before and after statistics and easy to understand evidence of success. For example, the 2011 edition reported: “New bus and bike lanes on First and Second Avenues in Manhattan improved bus speeds by 15-18 percent, increased bus ridership by 12 percent and cycling volumes by 18-177 percent, and reduced crashes by up to 37 percent.”

Once a community has measures of the performance of the transportation system itself, transportation staff can work with other agencies and departments to link them to larger goals such as long-term changes to public health, economic growth, and the physical environment. Such measures require collaboration with and leadership from other departments, sectors, and often universities. Many communities making progress in this area started long before they had an official Complete Streets policy. In California, the San Francisco Bay Area’s regional transportation planning agency, the Metropolitan Transportation Commission (MTC) set performance goals in response to a state law passed in 2002. MTC created “stretch” targets, such as achieving a ten percent reduction from 2008 in the percent of income spent on housing and transportation by low-income households. The Kansas City MPO has proposed specific performance measures to match each of its nine goals. For example, under public health, it lists three performance measures: physical inactivity levels, three-year average of ground-level ozone levels, and number of annual ozone pollution violations.

Progress in Boulder, Colorado has in part been driven by the overarching goal, set in 1996, to hold vehicle-miles traveled to 1994 levels. This was to be achieved by reducing single-occupancy trips to 25 percent of total trips by 2025 and increasing the share of trips taken by other modes. Progress on these simple but ambitious goals are tracked in regular reports; in 2012, the city reported that single-occupancy vehicle trips have fallen by about 15 percent since 1991, but that the annual rate of decline needs to double to reach the goal by 2025. Since 1991, bicycling has
increased by 75 percent and bus use has soared by 300 percent, while walking has remained at around 18 percent of all trips. The city has succeeded in holding vehicle miles travel steady.\textsuperscript{13}

Transportation professionals in many communities complain about not having the resources to collect performance data, or they see it as a luxury. Results such as those shown by New York City and Boulder may change their minds: the hard figures documenting the performance of Complete Streets implementation can become a powerful selling point for future projects and funding.
Resources: Measuring performance

Counts


c) Pedestrian Counts, Seattle: http://www.downtownseattle.com/Resources/PedestrianCounts

d) Bicycle and Pedestrian Counts, Minneapolis: http://www.minneapolismn.gov/pedestrian/data/pedcounts

Health Impact Assessments (HIAs) and environmental audits


Citizen surveys and travel diaries


Performance goals

b) Sustainable Communities Index Transportation Objectives and Indicators, San Francisco: http://www.sustainablesf.org/webpages/view/51

Before and after studies


c) Valencia Street Road Diet — Creating Space for Cyclists, Pedestrian and Bicycle Information Center: http://www.bicyclinginfo.org/bikesafe/case_studies/casestudy.cfm?CS_NUM=103


Multimodal Level of Service (MMLOS)


g) Expanded Transportation Performance Measures to Supplement Level of Service (LOS) for Growth Management and Transportation Impact Analysis, Florida Department of Transportation: http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_PL/FDOT_BDK77_977-14_rpt.pdf

Annual reports


c) Annual Reports, Seattle: http://www.seattle.gov/transportation/sdotreports.htm


General
d) Driven Apart: How Sprawl is Lengthening Our Commutes and Why Misleading Mobility Measures are Making Things Worse, Joe Cortright, CEOs for Cities: http://www.ceosforcities.org/research/driven-apart
VI. Projects

While this report has focused on how the internal workings of transportation agencies must change, the intent of Complete Streets is to ultimately change the outcome: the streets of our communities. The hallmark of a community that is pursuing Complete Streets effectively is not the one beautiful, innovative boulevard that took years to plan and build and features a protected bike lane, pedestrian bulb-outs, and transit prioritization features – it is the changes in everyday work so that every transportation project is seen as an opportunity to improve the transportation network for all users.

Supporters should look for volume and variety in transportation projects every year and for the many projects, both big and small, that are all starting to make a difference. In New Haven, Connecticut, more than 30 roads have been improved for all users since the city’s 2008 policy. In every annual report, Seattle’s Department of Transportation lists dozens of projects that have brought more balance into the transportation system. For 2010, the city reported items such as miles of bike lanes striped, pedestrian and bicycle spot improvements, curb ramps constructed, and urban trees planted. Charlotte, North Carolina keeps a similar list. In Rochester, the Planning Department is keeping a database of projects and their lengths, including several road conversions launched as part of maintenance projects; new trail projects; and small changes such as signal adjustments. The list also notes when proposed projects were shelved due to community opposition, or when funding or space considerations resulted in a less-than-optimal result. A few communities, including Boston and Seattle, have established detailed project-specific websites.

Many communities committed to building Complete Streets are also taking steps beyond street infrastructure to encourage more people to take up active transportation. Nashville’s Complete Streets team has created ‘the Groove,’ a map to help bicyclists navigate the friendliest path. Rochester’s Planning Department participated in the creation of a new safety awareness program, “See, Safe, Smart.” The League of American Bicyclists and the Safe Routes to School National Partnership, which both promote more walking and bicycling, organize their efforts around an approach called the 5 E’s: Engineering, Enforcement, Encouragement, Evaluation, and Education. Such a holistic approach helps make walking and bicycling part of everyday life in a community.
Lessons learned

Complete Streets implementation takes a wide variety of forms and paths, but a few basic lessons hold true in communities of all types and sizes.

Successful implementation requires opening up the decision-making process to the many agencies and departments that work with a community’s streets as well as other interested departments, community groups, and community leaders. Agencies that broaden the transportation decision-making process to include many more players are those that have made the most progress. Collaboration can take a number of forms, ranging from formal advisory committees appointed by officials, to informal work groups, to project-oriented teams organized within the transportation department. Whatever the format, these groups need the active participation of their members and a problem-solving attitude. Infrequent meetings of a disengaged stakeholder group that focus on dry staff reports will not produce the innovative thinking that is usually necessary to change everyday practice.

In larger jurisdictions, much of this give-and-take will take place inside of the governing structure. In Boston, the necessary work involved different city departments, and the writing of the design manual became the forum of their collaboration. In much-smaller Kauai, the health collaborative Get Fit Kauai was able to engage a variety of stakeholders, including County Council members and the city business association, who helped the transportation planners and engineers work out new processes.

It is essential for the collaboration to be driven by a true champion who brings the various agencies and stakeholders together and helps them overcome differences. Champions are generally good at understanding what needs to change and figuring out what will motivate others to embrace a new way of doing business. That said, they are most effective when they have the strong backing of community leadership. In both Boston and Kauai, such leaders were fully on board with the commitment to Complete Streets and the mayors of both communities helped broadly communicate its importance. This support gave champions the benefit of an educated community.

Public health agencies are effective at getting the right people in the room, and organizing outreach and education.

It is unusual for a public health entity to take the central leadership role during the implementation process. It is more common for public health to lend support to planning and public works agencies by serving as a convener and educator. Some public health agencies have sponsored Complete Streets workshops that bring together stakeholders to work out the implementation plan. They also sponsor walking audits, write brochures and research-based reports, and even make videos that help explain the benefits of Complete Streets. The public health community is generally well regarded and its opinions are respected. As a knowledgeable but newer participant in the transportation realm, transportation practitioners generally appreciate the support from public health and learn to ask health-oriented staff to weigh in at important steps in the transportation decision-making process.

Public health grant programs increased the effectiveness of public health organizations. With this support, communities could build the necessary capacity to focus on Complete Streets implementation. It has enabled the creation of new, though mostly temporary, staff positions inside public health agencies, inside transportation agencies, or with non-profit groups with transportation expertise.
Reaching full institutionalization requires gaining a thorough understanding of existing decision-making structures and determining specific actions that remove barriers to Complete Streets. In some cases this means creating entirely new decision-making systems.

Communities that do not understand the current decision-making process can be stuck by unexamined procedures and rules, resulting in very limited changes such as doing no more than striping a few bike lanes. Understanding the current system requires focused attention. In many communities, few have a clear picture of all the steps involved in selecting, planning, and building transportation projects. The process of developing this understanding has the advantage of building relationships and a common vocabulary before difficult decisions have to be made.

Many communities find Complete Streets implementation workshops helpful in starting this discussion. As people from different departments learn about what their counterparts do, the barriers to a Complete Streets approach sometimes become obvious. This understanding can also come about when people from different agencies, departments and interest groups meet as part of the committee or advisory board charged with implementing Complete Streets. Launching multi-modal pilot projects can be another way to discover these barriers, but only if there is a commitment to using them as a way to change the underlying system; otherwise the rules may simply be temporarily waived without examination.

Working through the current process can lead to simple changes that level the playing field. Particular attention should be given to the way projects are selected and prioritized; in some communities this leads to an overhaul of existing procedures. Comprehensive institutionalization will also reach beyond the practices of the transportation departments to affect the functioning of the transit agency, the parks department, the zoning board, and other entities.

**Training and education must be ongoing.**

Putting a Complete Streets into practice takes time and everyone involved must be engaged every step of the way, albeit in different capacities. In many communities, the work inside agencies to build understanding, buy-in, and new skills takes many months. Residents, business owners, and community officials do not need a detailed understanding of the process, but up-front and consistent communication on new projects is critical. If community members see automobile lanes or parking being removed without understanding the reasoning, they may block further progress. Ongoing, positive input from the community helps to ensure that negative feedback from a few residents does not slowly erode Complete Streets implementation.

Creation of new performance measures often lags. Communities may need to focus first on simple steps that demonstrate the success of their Complete Streets approach. Documenting success can be the best way to sustain long-term support.

Transportation agencies have long relied on a few, narrow measures of their progress, and adding new measures takes time, thought, and resources that may feel they cannot spare. Support from community leaders can be a vital push toward changing those measures or adopting new ones. The initial focus should be simply collecting relevant data, particularly non-motorized travel data. Collecting and analyzing before-and-after data on an improved corridor can show dramatic results, especially in improved safety. Communities can also look beyond hard, quantitative data to collect qualitative survey data, asking residents about their use of the transportation system and their satisfaction with it. The Nashville Metropolitan Planning Organization used such a survey when it revamped its project prioritization system.
Agencies that have measured their success, such as New York City and Boulder, Colorado, are reaping the rewards as they share their findings with decision makers and citizens. Hard facts documenting success builds support for future investment even in times of constrained fiscal resources.

Public health agencies, with a much stronger tradition of evaluation than the transportation industry, can help in the development of new performance measures, and are doing so in a number of communities. Given the existing data and resource limitations, new measures must be simple and sustainable.
Works cited


Endnotes


8 For more information about the transect, visit http://www.transect.org/transect.html.


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