

5. Steps to Implementation

Chapter 5 provides a “How to Manual” for implementing complete streets projects; from involving city departments, through building expertise and support, to changing procedures, financing projects, and measuring progress. The planning process as well as the design and construction of complete streets are critical elements for each community to improve the quality of life for their residents.

5.1 Identifying and Involving City Departments

As road projects have complex layers of funding and planning, building complete streets will require close collaboration between all city entities as well as regional partners early on. Most likely, the planning and public works department will be involved early on in the process. However, any entity can take on a leadership position in promoting complete streets. The following departments all have a role in the development of complete streets policy and implementation³⁹:

- **City Council** - Can formally endorse complete streets, can authorize plans, and can direct transportation funding;
- **Mayor or City Manager** - Supervises all departments and sets the direction together with city council;
- **Engineering/ Public Works Departments** - Designs and maintains road ways, deals with specific projects;
- **Planning, Community and Building Department** - Identifies connectivity issues and provides long-term guidance, and works with private investors on-site planning issues;
- **Health** - Walking and biking can have tremendous health benefits for residents; enabling residents to pursue an active lifestyle has become more and more important to health professionals;
- **Parks** - Connecting to local recreational facilities is a challenge; planning and building complete streets can reduce on-site parking demands;
- **Chief of Police** - Regulates traffic lights and enforces speeds;
- **Schools** - Have a major stake in getting children to school safely; can assist with educating children on how to safely navigate streets;
- **Fire** - Maintaining maneuverability of emergency vehicles will be important when designing complete streets;
- **Economic Development** - Has contact to the business community and can help identify employers, employees and customers transportation needs.

³⁹ Depending on the internal structure of each community, some of the following departments may have different names, may be combined or may not exist.

Depending on the unique circumstances in each Cuyahoga County community, the following list of strategies provides an overview of options the leading person or agency might want to consider in order to involve all the stakeholders to start a complete streets process:

- **One-on-One Meetings** - Introduce the concept of complete streets, meet with department heads (start with engineering and planning), mayors and council members;
- **Complete Streets 101** - Arrange a presentation with CCDPW and County Planning to build expertise or support;
- **Complete Streets Policy Task Force** - Establish a task force to work on developing a policy for the community, make sure city council and all department heads are on-board and will adopt the policy;
- **Staff Working Group** - A working group can write a complete streets implementation plan and work on updating procedures within the city (see section 5.4).

A regular schedule for inter-departmental meetings and/ or a complete streets review group should be established to review upcoming road projects, measure outcomes of new policies (reduced crashes, increased public transit ridership or other measures) and keep track of success (maintenance, reconstruction and new construction). For instance, the City of Cleveland Heights established a Transportation Advisory Committee in 2013 that consists of department representatives as well as citizen advisors (a bicyclist, a transit rider, a pedestrian, a representative of the business community, and a disabled person). The Advisory Committee will be first tasked with developing a complete streets policy. In the long-run, the Advisory Committee will review upcoming road projects based on improvements that could be made for all users of the road.

5.2 Building Expertise and Support

Local complete streets leadership will need to build support among city agencies and elected officials. Cuyahoga County is happy to support local leaders with technical expertise and workshops to engage local decision-makers and staff. Upon request, a core team from Cuyahoga County will arrange visits in the communities with elected officials to introduce the Toolkit and roll-out the County-wide complete streets initiative. These meetings will provide an opportunity for an in-depth discussion of the concept of complete streets as well as initial review of priority roadways within the individual communities.

Collaboration with regional and community organizations is integral to achieving a county wide network of complete streets. In addition to strengthening relationships within and between municipalities, community stakeholders and transportation agencies; local non-profit organizations and educational institutions should be engaged as well. Additional, key partners include:

- Cuyahoga County Planning Commission,
- Cuyahoga County Department of Public Works,

- Greater Cleveland Regional Transit Authority,
- Cleveland Metroparks,
- Northern Ohio Areawide Coordinating Agency,
- Cuyahoga County Board of Health,
- Northeast Ohio Regional Sewer District,
- First Suburbs Consortium (FSC) which represents nineteen (19) cities that abut the city of Cleveland;
- Bike Cleveland, a local bike advocacy organization, working to build livable communities by promoting cycling and campaigning for the rights and equality of the cycling community including street design and safety projects;
- Cuyahoga Board of Developmental Disabilities, for ADA assistance and accessibility design suggestions within rights-of-way; and
- National Complete Streets Coalition of Smart Growth America.

As part of our efforts to inform and provide services to Cuyahoga County communities, County Planning and CCDPW will offer the following:

Technical Assistance - Complete Streets 101 workshops will be offered for local elected and appointed officials and city staff. The workshop consists of an introduction to complete streets, including the Toolkit, an overview of complete streets and procedural training so that different municipal departments learn their role in the implementation of complete streets. Communities will gain a better understanding of the implementation process from planning, to decision making, to funding, to engineering and to construction. The workshop will also cover obstacles and challenges and end with a brainstorm of potential candidate projects.

Public Outreach – As the political cycle by its very nature has a high turnover, an annual presentation can introduce the concept to newly elected officials, while highlighting progress and metrics for returning officials. County Planning staff is available to provide annual presentations to Mayors and Managers Association, FSC, County Planning Board, NOACA board, upon request.

While the County Planning staff will work to keep communities informed, a successful complete streets policy will require strengthening relationships between municipalities, community stakeholders and transportation agencies through awareness campaigns such as the examples below:

- **Bike/Pedestrian Reality Check**⁴⁰ – Experience is a powerful tool and provides an intimate and necessary correlation between the processes of actual experience and implementing a policy for complete streets. If elected officials and departmental staff join community members on a

⁴⁰ (Birk, 2010)

bike/walk along a key corridor or area they will discover the realities of the streets that they would never encounter in the course of their normal duties. Focusing only on policy content eliminates the opportunity for decision makers to develop opinions and concepts based on their interaction with the place. As each person's experience is individualized there will be a diversity of perspectives on the needs and potential for implementation that will contribute to a better developed project. A good example of this type of project development is the Bike-N-Brainstorm provided by Akron Metropolitan Area Transportation Study (AMATS).

- **Pop-up Events** (e.g. Better Block, [Pop-Up Rockwell](#)) – These proof of concept temporal installations help a community envision permanent changes in their roadways.
- **Staff a Complete Streets Table or Booth** – Provide information and activities at local festivals and events. In addition to promoting the use of new and improved infrastructure and providing information to community members about the program and benefits to their community. Staffing a table is also an opportunity to get feedback from community members or conduct attitude surveys.
- **Sponsorships** – Sponsor walking and biking activities; such as walking or running clubs and bike events.
- **Partnerships** – Partner with the local communities, municipal safety services and stakeholders to implement low cost, low commitment, small scale, temporary interventions to promote mode shift by closing key corridors to vehicles one Sunday/month in June, July and August to allow bikers, runners and walkers to enjoy a stretch of their community without having to worry about automobile traffic.
- **Education** – Partner with municipal safety services for classes on using the roads. Or [Ohio City Bike Coop](#) offers "Traffic Skills 101" workshops for people to learn the basic mechanics of bike safety and to earn a certificate.
- **Social Media Campaigns** – Utilize social media sites such as Facebook, YouTube, and Twitter, to educate and promote events, projects, or accomplishments in relation to complete streets projects in the different municipalities.
- **Economic Development Campaign** – Market to the diversity of transportation modes by differentiating and creating incentives for alternative modes of travel. For instance numerous restaurants host "Bike Nights" that include discounts and/or raffle prizes during the summer to encourage cyclists to visit their establishment. Restaurants that have consistently hosted bike nights through the summer include: Burntwood Tavern and Herbs Tavern in Rocky River, Buckeye Beer Engine in Lakewood, Brew Kettle in Strongsville, and Stampers in Fairview Park. Nano Brew in Cleveland has a bicycle care station with tools, bike pump and tire patch kits; and they host many bicycle related events and group rides.

All in all, working with municipalities, as well as community and regional partners to implement complete streets will help create healthy communities and improve the quality of life and enable residents to pursue active lifestyles while reducing air pollution.

5.3. Developing and Adopting a Policy

By February 2014, more than 610 jurisdictions nationwide had formally committed to a complete streets approach by adopting some form of a policy.⁴¹ There is a range of policy categories, including broad policy which articulates government-wide direction; specific policy which may be developed for a particular issue; and operational policy which may guide decisions on programs.⁴² The types of policies listed below are modified from The Complete Streets Local Policy Workbook, published by SGA and NCSC and are options to consider within the context of Cuyahoga County government⁴³.

Legislative – Legislation requires the needs of all users be addressed in transportation projects. Changes to the city code through the creation of complete streets ordinances are typically the way in which legislation is executed. Ordinances require strong support from the community and elected officials, and are enforceable by law. Another legislative tool is a complete streets law enacted by direct ballot by the general voting public, also enforceable by law.

Resolution – Resolutions are non-binding, official statements of support. In a community, resolutions are mostly approved by Council, but do not require action and depend on community, political, and agency will to be effective. Resolutions within an agency or department are issued by the department head and usually created internally and are likely to be accompanied by changes in practice to ensure implementation.

In Ohio, Resolutions issued by a Township's Board of Trustees are binding by law, as well as official statements of support for approaching community transportation projects.

Planning Documents – Complete streets policies can be identified within community comprehensive plans or transportation plans. Listed among the community's goals for the future, a plan can provide some implementation guidance by identifying specific corridors in particular need for increased multimodal planning and design.

Design Guidelines – Communities may decide to integrate complete streets planning and design into new design guidance for their street networks. Creating new guidance is a great way to ensure that each street project's design is compliant with complete streets goals. Design guidance is an important tool for implementation.

⁴¹ Data from *The Best Complete Streets Policies 2013*, Smart Growth America and National Complete Streets Coalition (National Complete Streets Coalition, 2014)

⁴² (Office of the Auditor General Manitoba, 2003)

⁴³ *The Complete Streets Local Policy Workbook*, Smart Growth America and National Complete Streets Coalition (National Complete Streets Coalition, 2012)

Tax Levy – Some communities have decided to pursue an additional tax that will fund transportation improvements. Usually approved by a general vote of residents, these levies have specific requirements and goals, which can include provisions to ensure complete streets.

Usually, policies are developed or modified because of a need that is not being met, and subsequently have numerous benefits to offer. A complete streets policy could have the following beneficial impacts on a community or governmental organization:

- **Community Benefits** – Increased safety and ease of transit for all users of a road; increased physical activity; better air and water quality; a more vibrant streetscape that encourages individual interaction and fosters a strong sense of community and increased economic resilience.
- **Distribution of Resources** – More equitable distribution of infrastructure funding such that investments in sidewalk and bike lane creation, traffic calming, and pedestrian amenities are on par with road building and widening, and congestion mitigation.
- **Public Engagement** – Better communication with the broader community, so that developers, residents, and business owners understand the community’s intended patterns of growth and investment.
- **Accountability** – Establishes a framework such that an agency knows how and where to address problems should they occur.
- **Legal Protection and Enforceability** – Policies can protect a municipality from unwanted types and patterns of development, and provides the legal recourse should an entity take issue with enforcement.⁴⁴

⁴⁴ (Griffin, no year)

Resources to develop a policy:

Complete Streets local policy workbook provided by National Complete Streets Coalition. (2012, August). <http://www.smartgrowthamerica.org/documents/cs-local-policy-workbook.pdf>

The Best Complete Streets Policies of 2012 provided by National Complete Streets Coalition. (2013, April). <http://www.smartgrowthamerica.org/documents/cs-2012-policy-analysis.pdf>

Model Policies provided in Complete Streets Toolkit - A Guide for Central Ohio Communities. Mid-Ohio Regional Planning Commission. (2012).
[http://www.morpc.org/trans/CS Toolkit Web Lo Res.pdf](http://www.morpc.org/trans/CS%20Toolkit%20Web%20Lo%20Res.pdf)

For an overview of adopted policies throughout the U.S. the national complete streets coalition provides the following policy atlas: <http://www.smartgrowthamerica.org/complete-streets/changing-policy/complete-streets-atlas>

5.3.1. Background Research and Informational Gathering

A comprehensive understanding of current decision-making processes for transportation projects in the community, including the departments that are involved is recommended prior to developing a complete streets policy. Data on health, commuting patterns, and traffic fatalities can help determine if current plans and policies that guide transportation decisions address multiple users in the street network. Being equipped with this background knowledge and how transportation projects are selected in the Capital Improvement Program (CIP) as well as ensuring that the right players are at the table is essential to the formation of the policy.

According to the [Community Tool Box](#), an online resource for those working to build healthier communities, it is essential to first consider if the policy is well-timed and if it effectively will leverage community strengths. It is furthermore important that the policy ensures community flexibility and adaptability to change in future situations.⁴⁵

5.3.2. Developing a Policy

After background research is completed and it is determined that the right elements are aligned to move forward in creating a policy, it is time to develop or draft a policy. The Community Tool Box suggests creating an action plan to carry out policy efforts. An action plan identifies a series of steps, a suggested timeframe and responsible entities for implementation, as well as funding and public outreach needs.⁴⁶

To ensure that a policy is strong and effective, SGA has defined the following ten elements that should be taken into consideration during the policy creation process.

⁴⁵ (University of Kansas, 2013)

⁴⁶ (University of Kansas, 2013)

Vision and Intent – A strong vision can inspire a community and help direct its efforts in the realization of a complete streets policy. Being clear about the primary purposes behind policy development—such as healthy or active living or youth safety—can help guide the choices that confront most policy creation processes.

Consider All Users – A complete streets policy should call for more than just additional bicycle and pedestrian facilities: it should consider the needs of all travelers. All sectors of the population should be considered as well as their particular needs, such as a community’s youth and elderly populations. Land uses should also be taken into consideration, such as schools, heavily traveled bus routes, and other factors that may influence travel mode and a person’s interaction at the street level (see Chapter 1.3 for more detailed information).

Create a Network by Increasing Connectivity – The ultimate goal of a complete streets policy is to create a network for all modes of transportation, with many access points that are all connected. The connectivity of the roadway network is an especially important feature for pedestrians, who are more reluctant to take indirect routes. An interwoven network with streets that accommodate different modes is also helpful in balancing transportation needs and dispersing individual travelers to alleviate congestion and conflict (see Chapter 2.1.2 for more detailed information).

Include All Roads and Appropriate Agencies – Creating a complete streets network requires collaboration among many different agencies. Roads are built and maintained by various agencies and jurisdictions: some by state, others are controlled and maintained by county and local governmental agencies, while private developers often build new roads. Ensuring that all agencies with jurisdiction over roads is necessary.

Consider All Types of Road Projects – All transportation improvements are opportunities to improve safety, access, and mobility. A strong complete streets policy will incorporate complete streets planning into all phases of all types of projects, including new construction, reconstruction, repair, and maintenance (see Chapter 2.2 for more detailed information).

Specify Exemptions – There should be a process in place that allows for exemptions so that some roads will be exempt from accommodating all users. The FHWA provides guidance on providing exemptions for bicycle and pedestrian travel, specifying that accommodation is not necessary:

- On corridors where specific users are prohibited, such as interstate freeways or pedestrian malls;
- When the cost is excessively disproportionate to the need. No universal cost-to-need ratio has been established, and costs and needs may be difficult to quantify. A 20% cap may be appropriate in unusual circumstances, such as where natural features (e.g., steep hillsides or shorelines) make it very costly or impossible to accommodate all modes; and
- Documented absence of current and future need.

Design - Communities adopting complete streets policies should use the best and latest design standards available to them. However, design specifics are often less important at first than the political will to choose different priorities in transportation planning and allowing flexibility.

Context Sensitivity - An effective complete streets policy must be sensitive to the community and street context. The context of a street includes the surrounding land uses, density of buildings and people, the age and characteristics of buildings. A street's surroundings are the major factors that define the character of the corridor. Ensuring that a complete streets treatment is context sensitive will allay fears that a small neighborhood street will become a widened transit spine (see Chapter 2.1.1 for more detailed information).

Performance Measures - Communities with complete streets policies can measure success a number of different ways, from miles of bike lanes to percentage of the sidewalk network completed to the number of people who choose to ride public transit. In most cases, performance measures are dealt with as a later implementation step. The performance measure noted above can provide good feedback for how a complete streets policy is working but other, less concrete measures are also valuable, such as those related to health, safety, and investment. (See section 5.7 for more detailed information)

Implementation Next Steps - A formal commitment to the complete streets approach is only the beginning. SGA has identified several steps for successful implementation of a policy, including offering workshops and other training opportunities to transportation staff, community leaders and the general public to help everyone understand the importance of the complete streets vision.

A great deal can also be learned by referring to model policies that other agencies have developed or existing policies that have been adopted by other municipalities. Appendix C provides policy language based on Mid-Ohio Regional Planning Organization's (MORPC) model policy; with commentary in italics based on guidance provided in SGA's Complete Streets Work Book as well as this toolkit.

5.3.3. Steps to Formal Policy Adoption

A formally adopted policy generally takes the form of a governing principle, plan, or course of action. In the public sector, policy generation usually evolves from a prescribed process, and is adopted by an ordinance or resolution. Legislative bodies make public policy decisions; others perform the administrative task of implementing those policies.⁴⁷

According to the Community Tool Box, developing a plan for advocacy prior to adopting a policy is important to the adoption process and overall acceptance and effectiveness. Steps included in this advocacy plan are:

- Identify precedents for the policy that have been adopted and implemented in other similar situations.

⁴⁷ (Municipal Research and Services Center of Washington, 1999)

- Describe how the policy meets the interests of potential targets, agents, and opponents.
- Describe the critical elements contained within the proposed policy.
- Gain an audience with those who can propose the policy or who will be active in forming its implementation.⁴⁸

Ohio is a home rule state, meaning that municipal corporations (cities and villages) have certain powers which permit them to exercise authority not specifically granted in the Ohio Revised Code (ORC), provided that the Ohio Constitution has not specifically prohibited that local authority. Included in these powers is the right to local self-government. Formal adoption procedures are therefore outlined in each municipality's charter. According to Section 715.03, *Powers by Ordinance or Resolution*, in the Ohio Revised Code (ORC); all "municipal corporations...may provide by ordinance or resolution for the exercise and enforcement of such powers".

5.4 Procedural Changes

Once communities adopt a complete street policy there are steps that they can take to get more projects on the road. The information is based on recommendations provided NCSC, and various implementation plans written by communities nationwide. A key to success will be to encourage inter-departmental working groups and to revise plans, policies, and road project prioritization processes.

5.4.1 Writing an Implementation Plan

Once a policy is adopted, communities should develop an implementation plan and identify specific changes to procedures and formal documents. An implementation kick-off meeting can bring together all city departments that collaborated for the policy and extend the invitation to other agencies that are concerned with transportation. The working group's aim should be to enable all users to safely navigate community streets.

A first task for the new working group should be to review existing documents and procedures, as well as identify real and perceived barriers to the implementation of complete streets.⁴⁹ The findings should be summarized within an implementation plan (list of tasks/ documents to change) that assigns responsibilities as well as estimates a timeline for implementing the proposed changes.⁵⁰

⁴⁸ (University of Kansas, 2013)

⁴⁹ (National Complete Streets Coalition, 2013c)

⁵⁰ (National Complete Streets Coalition, 2013b)

Resources to develop implementation action items:

Planning for Implementation provided by National Complete Streets Coalition.
<http://www.smartgrowthamerica.org/complete-streets/implementation>

Taking Actions on Complete Streets - Implementing processes for safe, multimodal streets. Provided by National Complete Streets Coalition. (2013, July). Smart Growth America:
<http://www.smartgrowthamerica.org/documents/cs/impl/taking-action-on-cs.pdf>

For sample zoning texts and amendments see: Ewing, R., & Bartholomew, K. (2013). *Pedestrian- & Transit-Oriented Design*.

Examples of Implementation Plans:

Cobb County. (2009, September). *Complete Streets Implementation Plan*.

http://cobbcounty.org/images/documents/comm-dev/land-use/Cobb_Complete_Streets.pdf

San Francisco. (2010, January). *Better Streets Plan: Recommendations for Improved Streetscape Project Planning, Design, Review and Approval*.

<http://www.sfcontroller.org/ftp/uploadedfiles/controller/reports/BetterStreetsPlan.pdf>

San Diego Region. (2012, June) prepared by American Planning Association California Chapter and Walk San Diego. *From Policy to Pavement - Implementing Complete Streets in the San Diego Region*.

<http://www.smartgrowthamerica.org/documents/cs/impl/ca-sandiego-policytopavement.pdf>
Great overview on different level of service measurements and roadway performance metrics

Once the implementation plan is in place and is being executed, it is advisable to continue the inter-departmental meetings but shift the focus toward specific road projects. The city of San Francisco established a Street Design Review Team⁵¹ that provides guidance and review of city road projects based on their “completeness” and considering the safety of all users of the road appropriately. Part of the continuing effort will be measuring success, giving feedback and refining the procedures. The following checklist, *Steps to Implementation*, summarizes actions to consider ensuring continuous road planning with all users in mind.

⁵¹ (City and County of San Francisco, 2010, p. 30f.)

Steps to Implementation

Kickoff

- ❑ Conduct an **implementation kickoff workshop** with representatives of each relevant city department (Introduce complete streets topic, learn what steps are involved in choosing, planning, and building transportation projects)
- ❑ Designate a **lead agency/ person**
- ❑ Establish a **broad-based committee** to oversee the process (departments, citizen)
- ❑ Write an **implementation plan**, identify barriers and challenges to complete streets, and establish a list of documents that need to be reviewed (see E.3.c for list of documents)
- ❑ Review and **update relevant documents** and procedures

Establish new Procedures

- ❑ Establish **project level checklists** of complete streets features and considerations
- ❑ Write new **road project development guidelines and procedures** Update **selection and prioritization process** for road maintenance
- ❑ Establish a **Streetscape Design Review Team**
- ❑ Work with **updated** plans, codes, design guidelines, and project-procedures
- ❑ Develop: **new organizational structures** (designate responsible entity for complete streets)
- ❑ Consider: project specific **design charrettes, temporary installations, pilot projects**

5.5 Financing Complete Streets Projects

As of 2014, there is no single designated source of money for funding complete streets projects thus implementation and maintenance may be accomplished by shifting of resources, leveraging new sources of funding, or both. Infrastructure and facilities that contribute to complete streets may be funded from several existing sources. As the implementation of complete streets becomes a standard procedure funding for these improvements will eventually be added to capital improvement budgets. Furthermore infrastructure projects that include complete streets components will be given additional consideration in project evaluation and selection methodology for state and federal allocation of transportation improvement funds. This section provides an overview of some federal and state funding as well as non-traditional sources of funding that can be explored.

In addition to developing the infrastructure and facilities that contribute to complete streets a series of smaller improvements and maintenance over time will also be required. This maintenance may include a variety of activities to restriping roads to maintaining the landscape for stormwater management. Depending on the nature of the project these maintenance costs can be addressed in the annual budget, a staffing plan or through potential partnerships with stakeholders and community groups.

For further information on funding of complete streets:

PBIC Webinar by Flusche, D., & Lagerwey, P. (2013, April 9). *PBIC-Webinar - Accessing Funding For Bicycle and Pedestrian Projects under MAP-21.*

http://www.walkinginfo.org/training/pbic/lc_webinar_04-09-2013.cfm

Ohio Department of Transportation. (2012, February 02). Funding for Pedestrian and Bicycle Facilities in Ohio.

http://www.morpc.org/trans/Feb2012_Ohio_Funding_for_Bike_and_Pedestrian_Facilities.pdf

Federal Highway Administration. (2012a). *Bicycle Road Safety Audit Guidelines and Prompt Lists.*

http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa12018/fhwasa12018.pdf

5.5.1 Sample Costs of Complete Streets Elements

The addition of complete streets elements can vary greatly within projects depending on the elements used and the right-of-way available. The least expensive option for a municipality is modification to a striping plan. In a standard roadway project, striping is eligible to be paid for at project cost.

Costs for Complete Streets Elements

An example of the cost of various complete streets elements (assuming no right-of-way is needed and in 2013 dollars) are as follows:

- 1 mile of 4" Sidewalk five feet wide - \$105, 600
- Street Benches – Varies widely based on aesthetics from \$250 - \$1,500
- Rain Garden - \$14.35 per square foot
- Permeable Pavement - \$13.50 per square foot
- Green Roof - \$17.00 per square foot (approximately \$2,500 per bus shelter)

Other complete streets elements have virtually no cost to initiate. Changing the signal phasing at an intersection to include a scramble phase has no cost but greatly improves pedestrian safety. Vehicle restrictions, such as alternate route suggestions and weekend driving restrictions have very little cost as well. Costs can be limited to signing and striping to let users know of the restrictions.

5.5.2 Funding Sources

A project that is funded with 100% local funds has greater opportunity for innovative design. Local design standards and criteria are used for the design and construction, so local agencies have control of

design decisions and construction. These projects are able to be processed from concept to construction quickly, based on the local funds becoming available.

However, most road projects are a complex undertaking that usually involves several layers of funding and different public agencies pulling together to improve the transportation system. The funding for road projects can be provided locally, through county administered, state-wide, or federal programs:

- Regarding federal funding, with the unveiling of the transportation bill Moving Ahead from Progress in the 21st Century Act (MAP-21) in 2012, a big concern was that the funding available for transportation enhancement would be reduced.⁵² A complete streets approach allows communities to leverage the more general surface transportation program (STP) dollars by including improvements for pedestrians, cyclists, and transit riders into any road project.
- NOACA announced in its Connection 2035+ long-range plan that it is working on developing a complete streets policy “to make sure that all projects that are awarded NOACA attributable funds provide safe and reasonable accommodations for all roads users, unless the project falls under one or more agreed upon exceptions.”⁵³
- One issue might be that state funding for road diets are not readily available. This would apply to streets that are designated state routes as well as evacuation routes. In instances where an evacuation route is concerned, communities want to make sure to involve ODOT and NOACA early on in the project to avoid problems further down the road once a multi-functional street is constructed.

The funding table in 5.4.4 first developed by ODOT has been edited to be more specific to Cuyahoga County and include private sources for funding. Information deemed reliable but not guaranteed. MAP-21 eligibility components have been incorporated into this document.

5.5.3 Example Projects

City of Painesville, Main Street Streetscape designed by Michael Baker Jr., Inc. – This project consisted of 800 feet of streetscape enhancements and roadway reconstruction in downtown Painesville. Many complete streets elements were included in this project. Some of the elements included:

- Parking Redesign – removal of angle parking and replacing it with parallel to widen pedestrian walkways.
- Streetscape Lighting – removal of existing lighting and replacing it with pedestrian level lighting along entire corridor. The electrical scope also includes the installation of conduit and stub-outs for future power pedestals that will make the corridor more conducive to special events like “Taste of Painesville” and a weekly summer farmer’s market.

⁵² (Flusche & Lagerwey, 2013)

⁵³ (NOACA, 2013a, p. 81)

- Pedestrian Bumpouts – constructing pedestrian bumpouts at intersections and key crossing locations. This shortens the crossing distance for pedestrians and creates outdoor seating plazas for businesses while also performing a traffic calming function.
- Permeable Pavement – 2,500 sf of sidewalk was replaced with permeable pavers to reduce the impermeable pavement area.
- Bioretention Cells and Tree Boxes – treats all of the required Water Quality Volume per the ODOT L&D Volume 2 manual while removing stormwater from the sewer system. Adds landscaping element for aesthetic purposes.
- The total estimated cost for this project was \$1,374,975.

City of Cleveland, Detroit Avenue Bike Lanes – This project restriped 1.7 miles of an urban principal arterial from West 25th Street to Lake Ave. This segment of Detroit Ave is a primary route many vehicles and bicycles use to commute from the near west city neighborhoods and suburbs to downtown. Businesses line Detroit Ave the entire length and side streets lead to urban neighborhoods. There is a high school and a large outreach ministry along the route. At the center of this route is the developing Detroit Shoreway neighborhood with restaurants, shops, and entertainment. This route is heavy in all modes of transportation: bicycle, pedestrian, vehicular, and transit.

Initially there were two travel lanes in each direction with rush-hour restricted parking allowed in the curb lane. The restriping project reduced the through traffic to one lane in each direction, a bike lane in each direction, and maintained parking on both sides. At key intersections parking and bike lanes were removed to allow for various turning movements.

5.5.4 Funding for Pedestrian and Bicycle Facilities in Ohio⁵⁴

Funding Name	Issuing Agency	Local Match	Eligible Projects	Application Cycles	Eligible Applicants
Transportation Alternatives (TA) http://www.noaca.org/	NOACA	20%	Bicycle lanes on roadway • Bicycle parking facilities • Bicycle storage/service center • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Paved Shoulders • Signed bike route • Traffic calming • Shared Use Path Construction that can include recreational trails provided they also have transportation component	Quarterly Application Period	County, City, Village, Township, and park districts
Safe Routes to School Program (SRTS) http://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/Pages/TransportationAlternatives.aspx www.dot.state.oh.us/saferoutes	ODOT	0%	• Bicycle lanes on roadway • Bike racks on buses • Bicycle parking facilities • Bicycle storage/service center • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Paved Shoulders • Signed bike route • Traffic calming • Shared Use Path Construction that can include recreational trails provided they also serve a transportation component • Safe Routes to School projects that are within a designated radius of a K-8 school	Application cycles vary based on fund availability.	County, City, Village, Township
Safety Program http://www.dot.state.oh.us/Divisions/Planning/SPPM/SystemsPlanning/Pages/FundingGuidelines.aspx	ODOT District Office	10-20%	• Bike and Pedestrian Facilities in Bike/Ped. High Crash Areas • Bike and Pedestrian Facilities that are appurtenances to the roadway project itself • Environment and safety education programs	Biannual Application Period: due by April 30 and September 30	County, City, Village, Township
Surface Transportation Program (STP) http://www.noaca.org/	NOACA	20%	• Bicycle lanes on roadway • Paved Shoulders • Signed bike route • Shared use path/trail • Spot improvement program • Bike racks on buses • Bicycle parking facilities • Trail/highway intersection • Bicycle storage/service center • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Traffic calming	Applications due on a quarterly basis	County, City, Village, Township
County Surface Transportation Program (CSTP) http://publicworks.cuyahogacounty.us/en-US/Project-Planning-Funding.aspx	County Engineers Association	20%	• Bicycle lanes on roadway • Paved Shoulders • Signed bike route • Shared use path/trail • Spot improvement program • Bike racks on buses • Bicycle parking facilities • Trail/highway intersection • Bicycle storage/service center • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Traffic calming	Annual application period	County

⁵⁴ Compiled 01/25/2013. Information deemed reliable but not guaranteed. MAP-21 eligibility components have been incorporated into this document. Heather Bowden, ODOT Bicycle and Pedestrian Planner. Revised by Cuyahoga County Planning Commission. Information deemed reliable but not guaranteed. MAP-21 eligibility components have been incorporated into this document. (Ohio Department of Transportation, 2012)

Funding Name	Issuing Agency	Local Match	Eligible Projects	Application Cycles	Eligible Applicants
Congestion Mitigation Air Quality (CMAQ) http://www.noaca.org/	NOACA designated air quality areas	20%	• Bicycle lanes on roadway • Signed bike route • Shared use path/trail • Spot improvement program • Bike racks on buses • Bicycle parking facilities • Trail/highway intersection • Bicycle storage/service center • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Non-construction outreach related to safe bicycle use	Application Cycles To Be Determined	County, City, Village, Township
State Capital Improvement Program (SCIP) http://planning.co.cuyahoga.oh.us/dopwic/	Ohio Public Works Commission (OPWC)	10%	• Bicycle lanes on roadway • Paved Shoulders • Trail/highway intersection • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Traffic calming • All improvements must be made in conjunction with roadway improvement project	Annual Application Period. Usually Due in the late summer for District One	County, Township, Village, or City. Sanitary Districts, and Regional Water and Sewer Districts
County Permissive License Plate Fees http://publicworks.cuyahogacounty.us/en-US/Project-Planning-Funding.aspx	County	0% - 50%	• Bicycle lanes on roadway • Paved Shoulders • Trail/highway intersection • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Traffic calming • All improvements must be made in conjunction with roadway and is included in the original project scope	Varies	County, City, Village, Township
Local Permissive Licenses Plate Fees http://codes.ohio.gov/orc/4504	City or Village		• Bicycle lanes on roadway • Paved Shoulders • Trail/highway intersection • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Signal improvements • Curb cuts and ramps • Traffic calming • All improvements must be made in conjunction with roadway and is included in the original project scope	Annual per Local Budget	City, Village
Recreational Trails Program http://ohiodnr.com/tabid/21369/default.aspx	FHWA & ODNR	20% ⁵⁵	• Urban trail linkages • Trail head and trailside facilities • Maintenance of existing trails • Restoration of trail areas damaged by usage • Improving access for people with disabilities • Acquisition of easements and property • Development and construction of new trails • Purchase and lease of recreational trail construction and maintenance equipment • Environment and safety education programs related to trails	Annual Application Period: Due in February	Cities, Villages, Counties, Townships, Park and Joint Recreation boards and Conservancy Districts, Jointly Sponsored Projects between Political Subdivisions, State Government Agencies, Federal Government Agencies, and Non - profit organizations
Clean Ohio Trails Fund http://clean.ohio.gov/RecreationalTrails/Default.htm	OPWC & ODNR	25% ⁵⁶	• Land acquisition for a linear trail • Trail development • Trailhead facilities • Engineering and design	Application cycles vary based on fund availability. Due in February when funding is available	Cities, Villages, Townships, Park and Joint Recreation Districts, Conservancy Districts, Soil and Water Conservation districts, and Non-profit Organizations

⁵⁵ This program can be used as a local match for the TA, SRTS, STP and CMAQ programs provided they meet both programs, however 5% of the match must be local

Funding Name	Issuing Agency	Local Match	Eligible Projects	Application Cycles	Eligible Applicants
County Bridge Program http://publicworks.cuyahogacounty.us/en-US/Project-Planning-Funding.aspx	County Engineers Association	20%	Bike and Pedestrian Facilities that are appurtenances to the bridge project itself. Funds the replacement of county bridges	Annual Application Period:	Counties
Municipal Bridge Program http://www.dot.state.oh.us/Divisions/Planning/LocalPrograms/Pages/MunicipalBridge.aspx	ODOT	20%	Bike and Pedestrian Facilities that are appurtenances to the bridge project itself. Funds the replacement of local bridges	Annual Application Period: Due in March	City, Village
Section 402 Federal, State, and Community Highway Safety Funds http://publicsafety.ohio.gov/grants.stm	ODPS	0%	<ul style="list-style-type: none"> • Maps • Safety/education position • Police patrol • Helmet promotion • Safety brochure/book • Training 	Annual Application Period: Due in July	County, city, township, village, law enforcement agency, board of education, health department, NOACA, state agency; or non-profit organization, church, hospital, educational service center, college or university
Federal Transit Administration (FTA) http://www.fta.dot.gov/grants/12305.html	FTA/ODOT	Varies	Bike and Pedestrian Facilities that are appurtenances to the transit project itself	Varies by program	Designated recipients
Community Development Block Grant (CDBG) http://development.cuyahogacounty.us/en-US/municipal-grants.aspx	HUD	Varies by program ⁵⁷	<ul style="list-style-type: none"> • Public facilities • Street Surface, repair or replacement • Sidewalks, new or retrofit • Crosswalks, new or retrofit • Street Lights, repair or retrofit • Traffic/Pedestrian Signals, repair or retrofit • Barrier removal for handicap accessibility (e.g., sidewalks, curb ramps) • Street Furniture 	Annual Application Period: Due in Fall	Urban County Community areas that meet HUD Objectives, and Entitlement Communities
Cuyahoga County Sanitary District Funds http://codes.ohio.gov/orc/6117	County	Up to 100 % based on account Balance	Storm or Sanitary Sewer Related Components	Varies based on availabilities of funds	City, Village
Ohio EPA Surface Water Improvement Fund www.epa.ohio.gov/dsw/nps/index.aspx	Ohio EPA	0%	Implementation of projects that address nonpoint source pollution (NPS) and/or stormwater runoff and result in water quality improvements in Ohio's streams, rivers and lakes	Application cycles vary based on fund availability. Deadlines vary	Local governments, park districts, conservation organizations and others

⁵⁶ This program can be used as a local match for the TA, SRTS, STP and CMAQ programs provided they meet both.

⁵⁷ This program can be used as a local match for the TA, SRTS, STP and CMAQ programs provided they meet both program eligibility categories.

Funding Name	Issuing Agency	Local Match	Eligible Projects	Application Cycles	Eligible Applicants
Ohio EPA 319 Grants www.epa.ohio.gov/dsw/nps/index.aspx	Ohio EPA	40% ⁵⁸	Correct NPS caused water quality impairment to Ohio's surface water resources. Section 319(h) implementation grant funding is targeted to Ohio waters where NPS pollution is a significant cause of aquatic life use impairments	Annual Application Period: Usually due in May	Watershed groups and others who are implementing locally developed watershed management plans and restoring surface waters impaired by NPS pollution
The Mobilization for Health: National Prevention Partnership Awards (NPPA) Program http://www.hhs.gov/ash/index.html	Dept. of Health and Human Services, Office of the Assistant Secretary for Health (OAS)	0%	Promote and accelerate partnerships, catalyzing collaborations in improving health through access to, and use of, preventive services across the United States. The program is designed to establish integrated, collaborative local, state, regional, or tribal partnerships to increase community awareness and action on preventive health services, promote health and wellness, educate and train, and establish communication programs to all community populations, regardless of social and economic barriers, and race and ethnicity	Application cycles vary based on fund availability.	Any public or private entity located in a State
The People For Bikes Community Grant Program http://www.peopleforbikes.org/pages/grant-guidelines	People for Bikes and Bike Industry Partners		People For Bikes Community Grant Program supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride	Biannual Application Period: Online Letters of Interest Due January & August	Non-profit organizations and local governments
Robert Wood Johnson Foundation Grants http://www.rwjf.org/en/grants/what-we-fund.html	Robert Wood Johnson Foundation		The Robert Wood Johnson Foundation provides grants for projects in the United States and U.S. territories that advance our mission to improve the health and health care of all Americans	RWJF awards most grants through calls for proposals (CFPs) from time to time. The Pioneer Portfolio accepts unsolicited proposals at any time and issues awards throughout the year.	Public agencies, universities, and public charities that are tax-exempt under section 501 (c)(3)

⁵⁸ A match commitment form must be completed for EACH organization that is committing any match contributions

Funding Name	Issuing Agency	Local Match	Eligible Projects	Application Cycles	Eligible Applicants
Rockefeller Foundation Grants http://www.rockefellerfoundation.org/	Rockefeller Foundation		The Rockefeller Foundation works to spread the benefits of globalization to more people in more places around the world. Funding inquiries must fit within four core issue areas: Advance Health, Revalue Ecosystems, Secure Livelihoods & Transform Cities. Within the Transform Cities issue is a focus on pushing the U.S. over the tipping point toward transportation planning and infrastructure policy that serves the needs of 21st century America	The Rockefeller Foundation will consider on line inquiries for funding projects that must fit within four core issue areas and one or more of their initiatives.	
Ohio State Infrastructure Bank (SIB) http://www.dot.state.oh.us/Divisions/Finance/Pages/StateInfrastructureBank.aspx	ODOT		THE SIB funds highway, rail, transit, intermodal, and other transportation facilities and projects which produce revenue to amortize debt while contributing to the connectivity of Ohio's transportation system and further the goals such as corridor completion, economic development, competitiveness in a global economy, and quality of life	Transportation Infrastructure Bond Fund Program and Revolving loan program	Any public entity such as political subdivisions, state agencies, boards, or commissions, regional transit boards, and port authorities

5.6 Maintaining your Complete Streets Project

Enabling year-round safe and comfortable access for all users requires seasonal maintenance of bike lanes, sidewalks and transit stops. During autumn, leaves tend to block and cover bike lanes, making it harder for cyclists to navigate streets. In winter, heavy snowfalls and a lack of maintenance result in impassable sidewalks forcing pedestrians (elderly, school children, families with strollers) to walk in the street.

Heavy snow falls tend to clog roads in Cuyahoga County every winter. More progressive snow-removal policies can help alleviate some of the traffic congestion that occurs during heavy snow falls. Cities might want to consider proactive anti-icing approaches such as applying de-icing materials to the roadway approximately two hours before the snow event. According to the North Dakota DOT, only 1/3 of the de-icing materials are needed.⁵⁹ Chapter 4.5 specifies alternate de-icing materials. As snow piles up it tends to block turning lanes and on-street parking spots. For more efficient snow storage, consider installing “No parking until snow is removed” signs for designated on-street parking spots to ensure clearance of most on-street parking spots (see city of Medicine Hat, Alberta, Canada).⁶⁰

The following highlights some of the strategies cities throughout the U.S. and in Cuyahoga County have developed to ensure proper maintenance of roads and sidewalks year-round. The strategies to maintain complete streets include (1) allocating maintenance funds, (2) prioritizing, scheduling and enforcing maintenance, and (3) designing for easy maintenance.

5.6.1 Maintenance of Pedestrian Facilities

Snow and mud piled up on the side of the road might force pedestrians to stand in the street while waiting for traffic signals to change. On snowy days, people with disabilities are especially disadvantaged as their independence relies on being able to walk or take transit.⁶¹ According to ADA accessibility regulations 28 CFR Paragraph 35.133 “A public agency must maintain its sidewalk in an accessible condition, with only isolated or temporary interruptions in accessibility.” This includes snow removal, debris removal, and maintenance of accessible pedestrian walkways in work zones.⁶²

Therefore it is important to ensure proper clearance of curb ramps at intersections as well as of sidewalks. While the accessibility of intersections is within the responsibility of the city, communities have different means of enforcing sidewalk clearance by property owners. The adjacent property owner can be fined or charged with removal of snow and ice from the sidewalk or curb ramp. In McCall, Idaho, code requires property owners to clear sidewalks and the city has authority to clear walks and assess fines on property owners.⁶³

⁵⁹ (ALTA Planning and Design, 2013, p. 4)

⁶⁰ (Easter Seals Project, 2013, p. 6)

⁶¹ (Easter Seals Project Action, 2013b, p. 7)

⁶² (Easter Seals Project, 2013, p. 13) citing U.S. Department of Transportation, FHWA, Civil Rights Questions and Answers About ADA Section 504

⁶³ (Easter Seals Project Action, 2013b, p. 70)

*Summary of action steps for communities regarding winter maintenance⁶⁴***Allocating maintenance funds:**

- Set aside funds to cover maintenance costs of pedestrian and bicycle facilities (prioritize school routes and major intersections);
- Consider purchasing a small snow plow for bike lanes and sidewalks;
- Explore collaboration with business districts regarding snow pick-up and removal (will be stored elsewhere);

Prioritizing, scheduling and enforcing maintenance:

- Develop Snow and Ice Management Plan that prioritizes essential zones that include all modes of transportation (priority should be placed on roadways connecting to medical facilities, transit facilities, businesses, and schools); Determine timelines, techniques, responsibilities, and priorities;
- Draft Snow Removal Policy that includes timely deadlines, responsible entities, and contact information for enforcement;
- Consider implementing a program to assist people who are unable to clear pathways due to physical limitations;
- Implement a reporting system of maintenance issues for sidewalks, bike lanes, and drainage ditches, including snow, leave and debris removal;

Designing for easy maintenance

- Design curb ramps, bridges, and sidewalks for accessibility by utilizing small snow plow vehicles
- Determine responsibilities of ownership and maintenance when planning a complete streets project;

5.6.2 Maintenance of Bicycle Facilities

While cycling is very popular in cold weather cities in Wisconsin and Minnesota, a pre-requirement for cycling is clear pathways that enable cyclists to be safe even in cold and snowy weather conditions. The following lists strategies for cities to ensure safe bikeways even in snowy weather:

- **Allocate Maintenance Funds:** The Minneapolis Bicycle Master Plan called for adding 183 miles of bikeway at a cost of \$270 million with an expected maintenance cost of \$1.3 million/ year.⁶⁵ Maintenance responsibilities are shared between the Minneapolis Park and Recreation Board, the City of Minneapolis Department of Public Works, the University of Minnesota, and Hennepin County on county roads.⁶⁶
- **Prioritize, Schedule and Enforce Maintenance:** A Snow and Ice Management Plan should prioritize bike routes to schools and business districts. Those bike routes should be cleaned first during a snow event. Leaf pick up in fall should also be prioritized on these routes.⁶⁷

⁶⁴ Based on actions recommended by Easter Seals Project (2013). Effective Snow Removal for Pathways and Transit Stops

⁶⁵ Invalid source specified.

⁶⁶ Invalid source specified.

⁶⁷ (ALTA Planning and Design, 2013, p. 5)

Communities might also wish to inform property owners and landscaping companies to not place leaves or pile up snow on bike lanes, sidewalks, and drainage ditches but to keep snow and leaves on the tree lawn.

- **Design for Easy Maintenance:** Bike lanes tend to be used for snow storage leaving cyclists forced into the roadway. If the bike lane is designed with a sufficiently wide (5 feet) bike lane buffer – the buffer can be used during the winter for snow storage.⁶⁸ Along priority bike routes, parking lanes could be used for snow storage. On streets that are heavily plowed, consider milling the area of pavement 3mm in depth where thermoplastic pavement markings are applied which can save maintenance costs in the long-run.⁶⁹

5.6.3 Maintenance of Transit Facilities

People taking the bus in cold weather rely on having sufficient shelter while waiting for their bus. RTA maintains more than 1,300 shelters throughout Greater Cleveland. Through their Adopt-A-Shelter Program⁷⁰, individuals, churches, Community Development Corporations (CDC), schools, Nonprofit Organizations (NPO), merchants and anyone who wants to make their neighborhood more attractive can adopt a shelter. RTA's homepage provides more detailed information. Cities can potentially facilitate maintenance agreements between RTA and business district associations.

Further information on maintenance:

Eastern Seals Project Action. (n.d.). *Developing Effective Practices for Snow Removal: Why is it Worth all the Effort?*

<http://www.projectaction.org/Portals/3/Documents/Training/Snow%20Removal%20Presentation2.pdf>

ALTA Planning and Design. (2013). *Winter Bike Lane Maintenance: A Review of National and International Best Practices.*

http://altaplanning.com/App_Content/files/Winter%20Bike%20Riding_White%20Paper_ALTA.pdf

Federal Highway Administration. (n/a). *A Guide for Maintaining Pedestrian Facilities for Enhanced Safety.*

http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/chap5.cfm

Institute for Public Administration. (2012, February). *Winter Maintenance of Pedestrian Facilities in Delaware: A Guide for Local Governments.* <http://www.ipa.udel.edu/publications/SnowRemoval.pdf>

⁶⁸ (ALTA Planning and Design, 2013, p. 2)

⁶⁹ (ALTA Planning and Design, 2013, p. 3)

⁷⁰ (G.C. RTA)

5.7 Performance Measurements for Evaluating Success

Performance measurements are quantitative and qualitative metrics that record preconditions (baseline data) and document post complete streets conditions at regular intervals to show progress toward reaching desired goals.

Identifying baseline data and developing performance measurements will serve to build a base of evidence for the effectiveness of the complete streets initiative and provide proof of concept for further investments in complete streets projects. Communities with complete streets policies can measure success of implementation in a number of different ways. Some communities may also want to explore and measure potential impact of complete streets on economic development and/or public health.

Performance can be measured as inputs, outputs, or outcomes:

- **Inputs** could include adoption of policies or dollars spent on complete streets projects.
- **Outputs** are the direct result of the actions above and could include the number of projects completed, the extent of the bicycle or pedestrian network, or the characteristics of that network.
- **Outcomes** reflect the impacts on the users of the system, and include counts of users, mode shares, and crashes, as well as subjective assessments such as perceived safety and user satisfaction.

Performance measures must be closely tied to planning goals: each must measure a relevant aspect of system performance. If the goal is to increase walking and bicycling or to improve safety for these modes, then performance measures should evaluate these outcomes. In developing performance measures, communities should thus take the goals of their complete streets policy as their starting points.⁷¹

Implementation of complete streets policies in Cuyahoga County communities advances the goals of NOACA. However each community should establish their own goals based on their own community needs, character, and infrastructure. Developing those goals should be part of developing a complete streets policy.

⁷¹ (Mc Cann & Rynne, 2010)

NOACA Transportation 2035+ Goals

Promote and implement **ten** transportation goals, focusing on:

- Strengthening the region's economy
 - Preserving the existing transportation infrastructure
 - Reinvesting in the urban core
 - Minimizing the impacts of adding new capacity to the system
 - Improving the natural environment
1. Advance the region's economic competitiveness based upon a sustainable development approach integrating environmental, social equity and economic perspectives.
 2. Enhance the natural environment and ecology of the region by improving air, land and water quality, conserving transportation energy, addressing climate change, and by identifying and preserving existing critical natural resources and environmentally sensitive areas.
 3. Preserve and improve the efficiency and safety of the existing transportation system, prioritize elements of the system identified as significant and ensure the system serves homeland security.
 4. Establish a more balanced transportation system which enhances modal choices by prioritizing goods movement, transit, pedestrian and bicycle travel instead of just single occupancy vehicle movement and highways.
 5. Improve the transportation mobility of the transit-dependent and low-income individuals to jobs, housing and other trip purposes.
 6. Provide additional transportation system capacity to move people and goods only when such capacity improvements promote the NOACA Principles, minimizing the adverse impacts of the investments on existing communities within the region.
 7. Foster reinvestment in existing urban core areas throughout the region, and work to target and manage transportation investments to implement Plan goals.
 8. Foster intergovernmental and private sector relationships to strengthen the regional community and assist in Plan implementation.
 9. Direct the Plan and its investments toward efficient, compact land use development/redevelopment that facilitates accessibility, saves infrastructure costs, preserves and enhances farmland, forests and open space and enhances the economic viability of existing communities within the region.
 10. Foster improvement in the quality of life of residents in the region through attention to aesthetics in the planning of the transportation system.

For years, information on car use has been collected and analyzed. Data collected includes traffic counts, timing counts, trip generation and other measures. In fact, ODOT has a Transportation Information Mapping System (TIMS) web-mapping portal where you can discover information about Ohio's transportation system, create maps, and share information. Other sources of data are collected at the regional level by NOACA, as well as by the County and individual municipalities.

However, there is very little standardized data collection on the other aspects of our public infrastructure. For complete streets we need to establish routine collection of data related to walking, biking, transit use, as well as green infrastructure. Bicycling and walking have only recently begun to be measured on a consistent basis. Walkscore.com is a popular website that provides a walkability index as well as bikability and transit indices. Furthermore, Walk Score can generate a commute report. This tool may be one method to consider when developing your performance measurements.

There is a new trend for engineers to develop ways of grading multimodal levels of service, and in turn planners and elected officials need to consider new methods of how to influence the shift to multimodal transportation. As a result, transportation decision makers will have a better understanding of all kinds of traffic trends and formulate projects that will result in measurable improvements for a variety of modes of travel.

Some measurements will be ongoing and some will only be needed for a short term following the implementation of complete streets infrastructure. The table on the next few pages highlights the possible performance measures for outcomes that individual communities may want to use to evaluate their own progress based on individual goals for their road network/community. This table also highlights where and how the data may be obtained. These metrics are organized from data sets that have broad appeal such as safety and are easy to measure to less precise measurements and loose correlations:

5.7.1 Recommended Performance Measurements

PERFORMANCE MEASUREMENTS	DATA SOURCE/ LEAD AGENCY	MEASUREMENT METHOD	HOW OFTEN (suggested)
SAFETY			
Average Vehicle Speed	Municipality	Count	With master plan update
Motor Vehicle Crashes per Vehicle Trip (property damage or worse)	ODOT	Counts from: <ul style="list-style-type: none">Ohio Dept. of Public SafetyODOT Counts	With master plan update
Pedestrian Crashes per Pedestrian Trip (property damage or worse)	ODOT ODPS Municipality	Counts from: <ul style="list-style-type: none">Ohio Dept. of Public SafetyODOT CountsHand counts	With master plan update
Bicycle Crashes per Bicycle Trip (property damage or worse)		Counts from: <ul style="list-style-type: none">Ohio Dept. of Public SafetyODOT CountsHand counts	With master plan update
Hotspot Locations (crash clusters)		GIS Data Analysis <ul style="list-style-type: none">Ohio Dept. of Public SafetyNOACA	With master plan update
Percentage of Crash Reductions at Crash Hotspots		GIS Data Analysis <ul style="list-style-type: none">Ohio Dept. of Public SafetyNOACA	With master plan update
PEDESTRIAN FACILITIES			
Percentage Increase of Sidewalk Mileage in Good Condition	Municipality	Measure (miles, feet)	Biennial
Number of Pedestrian Trips		Count	Post project Biennial
Miles of Pedestrian Lighting Added		Measure (miles, feet)	Post project Biennial
Sidewalk Furniture Installed		Count	Post project Biennial
Intersection Improvements Installed (i.e. scramble phase, pedestrian signal)		Count	Post project Biennial
Mid-block Crossing Improvements Installed (i.e. island refuge, bump outs, chicanes)		Count	Post project Biennial

PERFORMANCE MEASUREMENTS	DATA SOURCE/ LEAD AGENCY	MEASUREMENT METHOD	HOW OFTEN (suggested)
BIKE FACILITIES			
Number of Bicycle Trips	NOACA Bike Advocacy Groups	Counts	Biannually: Fall and Spring
Miles of Bike Lanes	NOACA Municipality Bike Advocacy Groups	Measure (miles)	Annual
Miles of Bike Exclusives Facilities (i.e. bike boulevard, cycle track)	NOACA Municipality Bike Advocacy Groups	Measure (miles)	Annual
Number of Bike Features at Intersections (i.e. bike boxes, bike signals)	Municipality Bike Advocacy Groups	Counts	Annual
Number of Spaces available for bike parking	Municipality Bike Advocacy Groups	County	Annual
TRANSIT IMPROVEMENTS			
Number of Transit Trips	RTA	Count	
Bus Shelters Installed		Count	
Days of Transit Offered		Schedules	
Hours Transit Offered		Schedules	
Average Trip Time		Count	
Average Wait Time		Count	
Multi-Modal Options installed for transit lines (i.e. park & Ride, bike racks on busses)		Count	
Lane miles with sidewalks and/or bike lanes		Count	
ENVIRONMENT			
Volume of Stormwater entering system during 20 Year Storm events	Municipality	Calculations	Pre and post project
Square Footage of Permeable Pavement	Municipality	Measure	Pre and post project
Number of Street Trees	Cuyahoga County Planning Commission	Urban Tree Canopy Study	Biennial
Miles of Roads treated with alternative deicing material	Municipality	Miles	Annual

PERFORMANCE MEASUREMENTS	DATA SOURCE/ LEAD AGENCY	MEASUREMENT METHOD	HOW OFTEN (suggested)
ECONOMIC DEVELOPMENT			
Percentage of Businesses that Promote Alternative Modes of transportation (i.e. bike parking, discounts if show bus pass or bike helmet etc...)			
Real Estate Values* (county values are every 6 years)	County Fiscal office	Tax Assessments	
Reduced Vacancies			
Percentage of businesses accessible by foot, bicycle or transit (in a certain radius?)	Walkscore.com		
Return on Investment in complete street		Cost Benefit Analysis	
PUBLIC HEALTH			
Participation in walking programs (i.e. Safe Routes to School, walking clubs)	Municipality	Counts	Annually
Participation in Bike clubs and bike events (i.e. monthly critical mass rides, membership in Ohio Bicycle Coop or Bike Cleveland, bike to school days, bike rodeo's)	Municipality Bike Advocacy Group Community Programs	Counts	Annually
Decrease In Ozone Alert Days	NOACA	Counts	Annually
PUBLIC PERCEPTION			
People Who Have Received Educational Materials Regarding Complete Streets	CCPC Municipality NOACA Advocacy Groups	Survey	Biennial
People Who Would Consider Alternative Modes Of Transportation		Survey	Biennial
Do People Feel Safer with Complete Street Improvements		Survey	Biennial
Do Parents Feel Their Children are Safer with the Improvements		Survey	Biennial

5.8 Refine Your Strategy

This Toolkit provides Cuyahoga County communities with many innovative practices to begin implementation of complete streets elements such as traffic calming, on-road bikeways, and measures to give bikes, pedestrians, people of all ages and abilities as well as transit priority on our roadways. Complete streets have been adopted as ordinances or resolutions in communities throughout the County, such as Cleveland's Complete and Green Street ordinance and Broadview Heights' bikeway ordinance. Community transportation studies in recent years have been focusing on complete streets. A periodic review of any policy is needed to determine the efficacy and to advance the concept of complete streets, as well as provide future direction for tools and practices that can work for individual communities. The following steps will help define and refine your implementation strategy:

- Identify the goals and objectives of complete streets;
- Develop performance measures based on the goals and collect baseline data so that you can measure your progress;
- Assess current projects and expected outcomes;
- Determine the tools and practices for day-to-day application, including a variety of measures for the Level of Service of Streets (LOS) for walking, cycling and transit. These would be similar in purpose to the ones now used to measure the LOS of motor vehicles to assess road congestion;
- Re-emphasize the priority of designing for vulnerable users;
- Continue to stress the need for equitable and transparent trade-offs among competing objectives when developing plans and designs for constrained corridors and intersections; and
- Plan for updates to ensure that the strategies are consistent with good planning, design standards, stormwater management and local laws.

Conclusion

Cuyahoga County aspires to create a built environment that focuses on better and more accessible transportation options for all residents, as well as address stormwater and other environmental concerns. This Toolkit describes and illustrates the concepts of complete streets, including a range of fundamentally different design standards and best practices for the County road network to incorporate.

Ultimately the Toolkit serves as a guide for communities to better understand the implementation process from planning, to decision making, to funding, to engineering and to construction, resulting in a network of complete streets Countywide. The Toolkit also provides a set of standards for developing mutual policies and procedures as well as new priorities for transportation investments that will accommodate all users of the streets. As part of our efforts to inform and provide services to the communities, County Planning and CCDPW will use the Toolkit to assist Cuyahoga County communities with complete street policy development and implementation.