

COMPLETE STREETS

GENERAL GUIDELINES

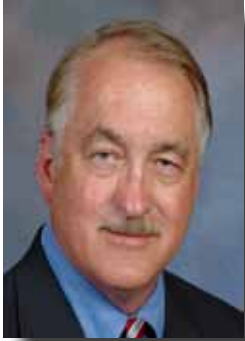
Report of the Road Commission
for Oakland County Complete
Streets Review Committee

September 2012



**ROAD
COMMISSION**
for OAKLAND COUNTY

BOARD OF COUNTY ROAD COMMISSIONERS' MESSAGE



Eric Wilson
Chairman



Gregory Jamian
Vice Chairman



Ronald Fowkes
Commissioner

The Board of County Road Commissioners strongly supports the concept of Complete Streets and the idea that public roads should be as safe and accessible as possible for all legal users. Therefore, the board is pleased to accept this report of the Road Commission for Oakland County (RCOC) Complete Streets Review Committee. We fully endorse the reports' guidelines and hope they will assist our staff and partner communities to provide quality facilities to all users of our road network. We also wish to acknowledge the support of the Oakland County Board of Commissioners in RCOC's Complete Streets efforts. We value our partnership with the County Board.

Safety is RCOC's number-one priority and these guidelines will help us to continue to provide the safest possible road system for all users. The board wishes to emphasize and support two key findings of the report:

1. We are all in this together. To successfully provide Complete Streets, we must have the interest and commitment of our partner communities. We will look to them to help us identify where investments should be made and to help fund and maintain those investments.
2. Earlier is always better. RCOC can best provide Complete Streets facilities if we know early in the road planning process what is desired by our partners. We will reach out to you and you must also reach out to us...early.

The board wishes to thank all of the members of the Complete Streets Review Committee for their dedication to this effort over the past year.

Eric Wilson
Chairman

Gregory Jamian
Vice Chairman

Ronald Fowkes
Commissioner

COMMITTEE CHAIR'S MESSAGE



I have found myself thinking more and more about the kind of transportation system we have built in America and whether it meets the needs of our society. Many people use the road network including, but not limited to motorists, bicyclists, pedestrians, disabled persons, transit users, equestrians and commercial/emergency vehicle operators. Some of these users find it difficult to use the road network safely and efficiently. Whether because of economic circumstances, age, personal mobility or other reasons, people make choices among available transportation modes. Regardless of the choice there are two needs that are universal to all road users: safety and mobility. The goal of Complete Streets is to provide all road users with a safe and effective transportation experience.

Recent legislation requires road agencies in Michigan to consider the needs of all legal road users. In response to this and to build upon the Road Commission for Oakland County's (RCOC) long standing commitment to safety as its top priority, the RCOC Complete Streets Review Committee began its work in June 2011. Committee members represented a wide array of interests and perspectives. We agreed on a mission statement and then went to work for over a year discussing and developing the principles and actions listed at the conclusion of this report. We explored the needs and challenges surrounding Complete Streets and prepared general guidelines for the agency to use when designing future road improvements.

I want to thank the members of the committee for their continuous efforts and commitment over the last year. I also want to thank the guest speakers who came to our meetings and helped us understand Complete Streets from their perspectives. Finally, I would like to thank the members of my staff who helped with the committee meetings and with the preparation of this report.

The enclosed report reflects the committee's discussions and conclusions. One key conclusion of the committee was that every road is unique. Every road has a unique context in terms of user needs, safety concerns, local community values, funding challenges and environmental constraints among others. We agreed that this document should offer a high level view of Complete Streets. Detailed solutions at the local level would come about after a thorough vetting of the needs and challenges surrounding any particular road improvement project. Thus, we agreed that **early** communication between RCOC and local communities is of high value and an integral part of a successful Complete Streets outcome.

Going forward, I offer the enclosed document as a resource and reminder that RCOC values the safe mobility of all road users and seeks to give them serious consideration in the planning, design, construction and maintenance of roadways on the RCOC network.

Sincerely,

A handwritten signature in black ink that reads "David A. Evancoe".

David A. Evancoe, AICP/ASLA
RCOC, Director of Planning and Environmental Concerns
Committee Chair

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INTRODUCTION

MISSION STATEMENT

The mission of the RCOC Complete Streets Review Committee is to explore the issues and challenges surrounding Complete Streets and prepare general guidelines for use by the agency when designing future road improvements. The committee's findings and recommendations will be presented to the RCOC Board of Road Commissioners for their information and possible action.



PURPOSE

The Road Commission for Oakland County (RCOC) Complete Streets Review Committee was formed on June 23, 2011 in response to recent professional and legislative developments and increased public interest in non-motorized transportation. The committee undertook the development of general guidelines to be used in road improvement activities by RCOC. The members of the committee represented a large spectrum of major shareholder groups: government entities, road agencies and public interest groups.

OAKLAND COUNTY – A QUICK VIEW OF THE COUNTY RCOC SERVES

While the focus of this report is the emerging need for Complete Streets considerations within Oakland County, it is beneficial to consider the larger context of the county's transportation system and the role RCOC plays in improving and maintaining the road network. According to the 2010 census, there were 1,202,362 residents in Oakland County. Almost 900,000 jobs are located in the county.



RCOC COMPLETE STREETS REVIEW COMMITTEE MEMBERS

Tom Blust	RCOC Director of Engineering
Craig Bryson	RCOC Public Information Officer
Craig Covey	Oakland County Commissioner
Danielle Deneau	RCOC Director of Traffic Safety
Julie Edwards	MDOT Metro Region, Planner
David Evancoe	RCOC Director of Planning and Environmental Concerns (Committee Chair)
Ron Fowkes	RCOC Road Commissioner
Rob Hayes	City of Novi, Director of Public Services/City Engineer
Darryl Heid	RCOC Director of Highway Maintenance
Dennis Kolar	RCOC Managing Director
Melinda Milos-Dale	Oakland Township, Parks and Trails Planner
Beth Nuccio	Oakland County Commissioner
Brian Pawlik	SEMCOG, Transportation Planner
Gary Piotrowicz	RCOC Deputy Managing Director/County Highway Engineer
Todd Scott	Michigan Trails and Greenway Alliance
Kristen Wiltfang	Oakland County Economic Development & Community Affairs, Planner

STAFF SUPPORT

Ken Hudak	RCOC Transportation Planner
Janet Waters	RCOC Transportation Planner
Judit Wittbrodt	RCOC Transportation Planning Coordinator

COMPLETE STREETS PRESENTATIONS BY GUEST SPEAKERS

Heather Carmona, from the Woodward Avenue Action Association, presented information on the Complete Streets Master Plan for Woodward Avenue.

Andrew Ceifetz, from Opus International Consultants, presented information on the use of gateway treatments associated with Complete Streets.

Paul O'Meara, from the City of Birmingham, presented details of a proposed road project and discussed the issues associated with trying to include Complete Street concepts.

Paula Reeves, from the Legal Department of RCOC, presented information on the liability issues associated with Complete Streets.



OVERVIEW OF TRANSPORTATION IN OAKLAND COUNTY

RCOC is the county-level road agency in Oakland County, Michigan serving the road needs of the county for almost 100 years. RCOC maintains more than 2,700 miles of county roads, over 230 miles of state highways and approximately 1,500 county, state and city traffic signals located in the county. RCOC maintains nearly 800 miles of gravel roads, one of the largest gravel road systems in Michigan. Many of these gravel roads carry traffic volumes that exceed those normally seen on paved roads in other parts of the state.

In Fiscal Year 2011, almost 1.1 million motor vehicles were registered in Oakland County. High traffic volumes coupled with severe winter weather take a toll on the road system generating a wide spectrum of road maintenance needs for RCOC.

ROADWAY MAINTENANCE

RCOC's regular maintenance activities on state and county roads include snow and ice removal, filling potholes and cracks that develop on road surfaces, removing debris and fallen tree limbs, roadside mowing and sweeping of road segments built with curb and gutter. Shrinking revenues have reduced the frequency of these basic maintenance activities.

The cost of winter maintenance in a year (snow and ice removal and temporary repair of large potholes) varies depending on the severity and length of winter conditions. Work dedicated to pothole patching and crack filling on paved surfaces represents one of the most important maintenance activities at RCOC. Roadside mowing is performed up to five times a year. Sweeping of curbed road segments occurs three times a year. Both services have been cut back recently due to reduction in the operating budgets and may need to be reduced even further in the future.



It is worth noting that roads without curbs are not typically swept. Some earth and gravel can be washed onto the paved surface. Paved approaches of gravel roads are periodically cleared of gravel. Consequently, some loose gravel and earth can be present on paved surfaces of roads intersecting with gravel roads and on paved surfaces of roads without curbs. Non-motorized traffic is more sensitive to uneven surfaces than motor vehicles. Therefore, non-motorized facilities can present substantially higher maintenance needs and costs for the responsible road agency.

TRANSIT



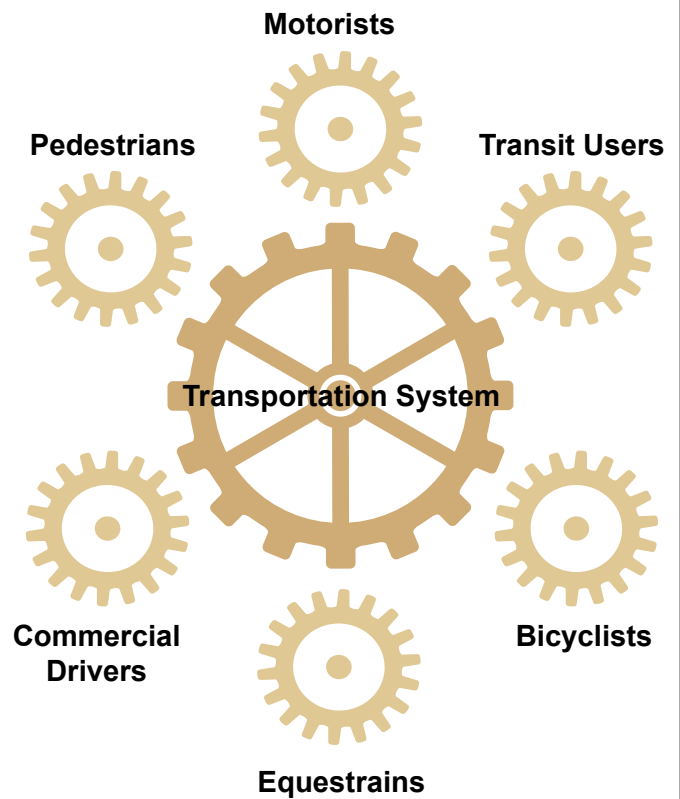
Many residents in Oakland County have access to mass transportation. The Suburban Mobility Authority for Regional Transportation (SMART) operates 24 bus routes in 23 of Oakland County’s communities. The buses travel on more than 225 miles of Oakland County roads (one-way miles). Generally, a SMART bus stop is located every two blocks along route, totaling more than 2,400 bus stops within Oakland County. Ridership data shows that approximately 11,200 passengers board at Oakland County bus stops on an average weekday. SMART’s major transportation hubs in Oakland County include the Royal Oak Transit Center, downtown Pontiac, Oakland Mall in Troy, Northland Center in Southfield and Oakland Community College-Orchard Ridge in Farmington Hills. SMART directly operates 29 connector buses in Oakland County which provide advanced reservation curb-to-curb service primarily to older adults and persons with disabilities. The SMART Community Partnership Program provides Community transit service operated by local communities to meet the specific transit needs within their community.



NON-MOTORIZED TRANSPORTATION

In Oakland County, there are a number of efforts to promote non-motorized transportation. The county has eight major trail systems that comprise the primary spine of the non-motorized network. Their total length is about 89 miles including proposed sections. According to a survey conducted by the United States Department of Agriculture’s National Agricultural Statistics Service Michigan Field Office in 2007, Oakland County has the largest number of horses (at 6,900) than any other county in Michigan. There are approximately 94 miles of public equestrian trails in the county. There are also approximately 134 miles of public mountain bike trails within the county at various locations. The Oakland County Trails Master Plan produced by the Oakland Trails Advisory Council (OTAC) in 2008 gives a comprehensive overview of the non-motorized trail system. The plan was developed to provide a framework for creating a connected system of greenways and trails throughout the county to serve a diverse range of users and provide safe and well-maintained links between points of interest.

A comprehensive transportation system serves a multitude of users and is connected in many facets.



BACKGROUND

MICHIGAN COMPLETE STREETS LEGISLATION

Michigan Complete Streets legislation (Public Acts 134 and 135) signed into law on August 1, 2010, gives new project planning and coordination responsibilities to city, county and state transportation agencies across Michigan. The legislation defines Complete Streets as “roadways planned, designed and constructed to provide appropriate access to all legal users ... whether by car, truck, transit, assistive device, foot or bicycle.” The legislation requires Complete Streets policies to be sensitive to the local context and consider the functional class, cost and mobility needs of all legal road users.

Public Act 135 provides for the appointment of a Complete Streets Advisory Council comprised of representatives from 18 statewide government and non-government stakeholder agencies. The Complete Streets Advisory Council was diverted to provide education and advice to the State Transportation Commission, road commissions, municipalities, interest groups and the public on the development, implementation and coordination of Complete Streets policies.




By adopting a Complete Streets policy, communities direct their transportation planners and engineers to routinely design and operate the facilities within the entire right of way to enable safe access for all legal users regardless of age, ability or mode of transportation. This means that every new transportation project guided by the community's Complete Streets policy could make the street network safer and more convenient for drivers, transit users, pedestrians, bicycles and other non-motorized users - making the community a better place to live.

MICHIGAN COMPLETE STREETS ADVISORY COUNCIL

The Michigan Department of Transportation's Complete Streets Advisory Council completed its mandated process of developing a statewide Complete Streets policy. The final report will include guidance for local jurisdictions. The guidance will help to formalize the collaboration among transportation agencies to address non-motorized and Complete Streets needs. The State Transportation Commission approved the Complete Streets policy on July 26, 2012.

More information can be found on the Advisory Council's website:
www.michigan.gov/completestreets



What are Complete Streets?
A roadway with all users in mind- including motorists, bicyclists, equestrians, public transportation vehicles and riders, and pedestrians of all ages and abilities.

National Complete Streets Coalition



What are the main benefits of Complete Streets?

- Safety
- Health
- Mobility
- Economy and Convenience
- Environment
- Independence

Highlights from the State Transportation Commission Policy on Complete Streets (Adopted July 26, 2012)

MDOT will consider Complete Streets features for roadways and other transportation facility construction or reconstruction projects it undertakes, or permits other public or private entities to construct within the state trunk line right of way, working through its context sensitive solutions process. The department will use this process and work with customers, local residents, road users and stakeholders to analyze proposed projects for the opportunity to design and construct facilities that contribute to complete streets. As part of that analysis, the department will consider:

- local context and recognize that needs vary according to regional urban, suburban, and rural settings.
- the functional classification of the roadway, as defined by the Federal Highway Administration and agreed to by MDOT and local transportation agencies.
- the safety and varying mobility needs of all legal users of the roadway, of all ages and abilities, as well as public safety.
- the cost of incorporating complete streets facilities into the project and whether that cost is proportional to the overall project cost, as well as proportional to the current or future need or probable use of the complete streets facility.
- whether adequate complete streets facilities already exist or are being developed in an adjacent corridor or in the area surrounding the project.
- whether additional funding needed to incorporate the complete streets facility into the project is available to MDOT or as a contribution from other transportation or government agencies from federal, state, local or private sources.



CONTEXT SENSITIVE SOLUTIONS MOVEMENT AND COMPLETE STREETS

A parallel design movement known as Context Sensitive Solutions (CSS) calls for road designers to follow a collaborative interdisciplinary approach to developing transportation projects. Under CSS, a road agency solicits dialogue with other governmental entities, industry groups, land use advocates and other stakeholders early in the project's planning phase. A cooperative spirit and an awareness of community interests help achieve the ultimate goal: the implementation of road projects that fit their surroundings while safely and effectively serving the needs of the transportation network. CSS has an important role to play in meeting today's complex transportation challenges. Accurately defining the context, including the setting and road type, help road agencies to develop safe and functional solutions while maintaining the unique character of a community or landscape.

CSS in Action



Before

After

Virtual treatment graphics are used to show how functional solutions can be implemented and discussed during public meetings. Image: Oakland County Economic Development and Community Affairs.

Increasing public concern regarding the impact of transportation projects on the natural environment and developed communities has resulted in the involvement of local officials and the public in defining the purpose and need for the projects in addition to the design features. The concept of CSS has emerged in response to this national trend, providing a process that can assist road agencies in developing transportation facilities that incorporate non-transportation needs of the community.

Health experts recommend adopting Complete Streets policies as an efficient strategy to help prevent obesity. A study done by the Centers for Disease Control and Prevention found that 43 percent of people with safe places to walk within 10 minutes from home met the recommended activity levels. Easy access to transit can also contribute to healthy physical activity. Nearly one third of transit users meet the recommended minimum daily exercise through their daily travel.

Simply put, streets and roads should be designed in response to their surroundings—their “context.” Applying CSS principles helps address transportation problems while respecting and enhancing land development alongside the streets or roads. This is achieved by addressing issues and challenges through a process that involves a diversity of stakeholders working together to balance competing interests. The term CSS represents flexibility in the application of design controls, guidelines, and standards to design a facility that is safe and meets the needs of all users.

Developing context sensitive solutions is based on a common set of tenets:

- *Balance safety, mobility, community, and environmental goals;*
- *Involve the public and stakeholders early and continuously;*
- *Use an interdisciplinary design team tailored to project needs;*
- *Address needs of all users;*
- *Apply flexibility inherent in design standards and guidelines; and*
- *Incorporate aesthetics as an integral part of good design.*

-Institute of Transportation Engineers



Complete Streets are for everyone. They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, equestrians and transit riders of all ages and abilities are able to move safely along and across Complete Streets. Features of a Complete Street make it easy to cross the street, walk to shopping destinations and bicycle to work. They help mass transportation to run on time and make it safe to access bus stops and train stations. Complete Streets can offer specific benefits in all communities regardless of size or location. Complete Streets can promote traffic safety, encourage non-motorized transportation for health reasons, lower transportation costs for families and foster strong communities.



The National Complete Streets Coalition notes that safety reviews found that streets designed with sidewalks, raised medians, well-placed bus stops, traffic-calming measures and treatments for disabled travelers can enhance pedestrian safety. Some features such as medians improve traffic safety for all users: They enable pedestrians to cross busy roads in two stages, reduce left-turning motorist crashes and improve bicycle safety.

Complete Streets play an important role in livable communities where all people, regardless of age, ability or mode of transportation feel safe and welcome on the streets. A safe walking and bicycling environment is an essential part of improving transportation and creating friendly, walkable communities.

A recent study by the National Complete Streets Coalition found that people who live in walkable communities are more likely to be socially engaged and trusting than residents of less walkable neighborhoods. Additionally, they reported being in better health and happier more often.



Safety for all road users has been the number one priority at RCOC since 1978. RCOC has worked for many years with local communities to provide safe access for pedestrians, equestrians and bicyclists through the provision of sidewalks, crosswalks, signage and non-motorized pathways within the public right of way. In this sense, Complete Streets principles have been practiced at RCOC for many years. In response to the new Complete Streets legislation, RCOC decided to revisit the way the agency provides for the needs of all legal road users to determine how the needs can best be met in the future.



Americans spend a considerable amount of money on transportation. Most families spend more on transportation than on food. When residents have the opportunity to walk, bike or take public transportation, they have more control over their expenses by replacing car trips with other options.

USER NEEDS

The committee discussed the needs of various users within the right of way. The following user groups were included in the discussion: bicyclists, motorists, pedestrians, disabled persons, equestrians, transit users and commercial vehicles. Complete Streets need to provide safety and mobility for all users. The specific needs of each of these user groups are summarized in the list on the following page.





BICYCLISTS' NEEDS

Bicyclists need a complete interconnected transportation network, which has facilities designed for their convenience, experience level and safety. A bicyclist needs a relatively clean, smooth surface to ride on. A safely routed continuous system with direct access to key destinations and connections to transit is preferred by bicyclists. Traffic signals should consider the presence of bicyclist, possibly using loop detection.

MOTORISTS' NEEDS

Motorists expect a road system which is safe, has minimal delays, has clear signage and which has a well maintained surface that is kept clear year round. The road system should provide mobility and access.



PEDESTRIANS' NEEDS

For pedestrians, safety is a high priority. Pedestrians need direct, well-lit, well-maintained routes which have good security and access to transit, shopping, restaurants, schools, parks and municipal facilities. Traffic signals should allow sufficient time for safe crossings by pedestrians. Refuge islands should be used whenever possible on wide roadway crossings.

DISABLED PERSONS' NEEDS

All transportation facilities are to be compliant with the Americans with Disabilities Act (ADA). The needs of people with various types of disabilities, including mobility, vision and hearing impairment, must be considered. Detours should be minimized. Signage should clearly indicate what is and isn't ahead. Pedestrian push buttons should be correctly located and should function properly. Bus/transit stops should be convenient to use.



EQUESTRIANS' NEEDS

Equestrian facilities need to include safe road crossings. Equestrians prefer routes which are used exclusively by equestrians and which have buffers between them and other users. Continuous, well connected routes are preferred. Equestrains generally use roadways only to connect to other preferred equestrian routes.

TRANSIT USERS' NEEDS

Transit stops and related facilities should provide safe, comfortable accommodations and be located in areas which allow convenient connectivity to other modes of transportation. This includes safe road crossings near transit stops, waiting areas with shelters, bike racks, well-lit stops and connectivity to pedestrian and bike facilities.



COMMERCIAL VEHICLES' NEEDS

Commercial vehicles, including trucks and emergency vehicles, require special considerations when designing roads. These can include loading and unloading areas, a wider turning radius than what would normally be specified, route designations and all-weather roads. Commercial vehicles need to have minimal delays along their routes.



According to Michigan law, bicyclists shall not ride more than two abreast except upon a path or portion of the highway or street set aside for the use of bicycles. Bicycles are not permitted on limited access highways, unless operated on paths constructed separately from the roadway and designated for the exclusive use of bicycles.

SIDEWALK

A narrow pathway designed primarily for pedestrians. Bicyclists are sometimes prohibited on sidewalks.



PAVED SHOULDERS

A portion of the roadway adjacent to the traveled way used for stopped vehicles, emergency vehicles, and lateral support of the sub-base. Paved shoulders could be used by bicycles and pedestrians.



ON-ROAD BIKE LANE

A portion of the roadway designated for bicycle use. Pavement markings are used to delineate the lane.



“In the past decade, interest in walking and bicycling has elevated so that travel surveys and transportation plans are addressing these modes. ... Transportation and community planners ... envision walking and bicycling as key elements in development patterns and transportation systems that offer more travel choices and that reduce vehicle demand, congestion pressure for new highways and environmental impacts.”

Walking and Bicycling in the United States, Kuzmyak and Dill, TR News 280 May - June 2012





SHARED ROADWAY

Bicycles and vehicles share the road without any portion specifically designated for bicycle use. Pavement markings (sharrows) alert vehicles that bicycles may be present.

OFF-ROAD SIDE PATH

A path shared by bicyclists and pedestrians. The path generally parallels the road and can be located within the road Right of Way.



CYCLE TRACK

A portion of the roadway designated for bicycle use which is physically separated from vehicular traffic.

BIKE BOULEVARD

A street segment that has been modified to accommodate through bicycle traffic, but which discourages through vehicular traffic. Also referred to as Neighborhood Greenway.



SHARING THE ROAD

Although the pedestrian population is second only to vehicular traffic, pedestrians mostly utilize sidewalks and paths which are separate from the roadway. Bicycle users co-exist with vehicle traffic and are the most numerous when it comes to the shared use of the transportation network.

Michigan Law, MCL 257.660a defines the manner by which bicyclists should conduct their use of roadways. A bicyclist should ride as close as practicable to the right-hand curb or edge of roadway except in the following cases:

- When overtaking and passing another bicycle or any other vehicle proceeding in the same direction.
- When preparing to turn left.
- When conditions make the right-hand edge of the roadway unsafe or reasonably unusable by bicycles, or if the lane is too narrow to permit a vehicle to safely overtake and pass a bicycle.
- When operating a bicycle in a lane in which the traffic is turning right but the bicyclist intends to go straight through the intersection.
- When operating a bicycle upon a one-way highway or street that has two or more marked traffic lanes, in which case the individual may ride as near the left-hand curb or edge of that roadway as practicable.

Regardless of mode, each user expects a well-maintained, safe network of routes with clear signage that provides mobility and access to local and regional centers of activity.



OBSERVATIONS AND CONSIDERATIONS

There is no singular design prescription for Complete Streets. Each street is unique and responds to its community context. A Complete Street may include sidewalks, bike lanes, wide paved shoulders, bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, roundabouts and more. A Complete Street in a rural area would look quite different from a Complete Street in a highly urbanized area and two Complete Streets in a rural area might be quite different from each other. However, they are all designed to balance safety and mobility for everyone who uses the street regardless of age, ability or mode of transportation.

The committee discussed various street types including subdivision streets, downtown streets, rural highways and urban streets. The possible accommodations of the specific needs of the different user groups were discussed and are described in the following pages.



SUBDIVISION STREETS

Subdivision streets provide basic and direct access to residential developments and commercial properties. They are characterized by low traffic volumes, low speeds and many access points. On-street parking can be permitted, but local restrictions may apply.

Observations

- Sidewalks are important elements of Complete Streets. However, their installation is not always practical, possible or desired by the community.
- The committee discussed the importance of connecting one subdivision to another via street and/or non-motorized connections. While connecting subdivisions is generally the preferred practice, there can be factors such as private vs. public streets, paved vs. unpaved streets that make connectivity a challenge. Traffic safety considerations also play an important role in providing connectivity.
- The main reasons for not connecting subdivisions are the potential for increased traffic volumes and/or speed on subdivision streets due to cut-through traffic, and traffic safety considerations.
- No on-street bike lanes and/or pavement markings are required within subdivisions, when motorists and bicyclist are traveling at similar speeds.
- Subdivision design decisions are often made by local governments and developers. RCOC provides input when roads under its jurisdiction are involved.

Considerations

- Several factors need to be considered when discussing sidewalks, such as population density, location of schools and parks, speed limits, design speeds, actual speeds, number of pedestrians and bicyclists, connectivity, whether it is an existing or proposed subdivision, costs, safety, environmental impacts, site conditions, available funding, right of way, and other, specific factors unique to a community.
- When plats are reviewed, RCOC will perform a review and work with the township to consider requiring sidewalks.
- Where separate subdivisions were not originally connected by streets, a multiuse path (typically wider than sidewalks) is preferable over a sidewalk as a means of connecting subdivisions.
- Connecting subdivisions with both streets and sidewalks should be considered, if it is feasible and desired by the community.



RURAL HIGHWAYS

Rural highways are spaced at intervals consistent with population density, and have paved or unpaved shoulders. Rural highways usually have higher speeds and lower traffic volumes, typically do not permit parking and have few access points. They are designed to provide both access and mobility. They usually function as intra-community links and offer connections between subdivision streets and higher level roads.

Observations

- The committee discussed the need to find possible accommodations for bicyclists outside of the travel lanes on rural highways, e.g., paved shoulders, and off-road side paths.
- Determining which rural highways should or possibly could accommodate bicyclists is important because there are not enough funds available to improve every road within the county.



Considerations

- Accommodating non-motorized traffic should be based on current and projected needs.
- SEMCOG Bicycle Travel Information maps and communication with local bike clubs and the League of Michigan Bicyclists can help identify preferred bicycling routes. Once completed, the SEMCOG Regional Nonmotorized plan will also be helpful to identify priority routes.
- RCOC will consider increased width for paved shoulders, where economically and environmentally possible, on rural highways for the safety and convenience of bicyclists.
- Pedestrians and bicyclists are taken into consideration when determining the width of new bridges during the design process.
- Traffic calming alternatives on high speed rural highways, such as gateway treatments, should be considered where practical and feasible in areas where bikers, pedestrians and equestrians may be present.
- Paved shoulders should be considered where possible and needed. For roadways undergoing improvements, engineering judgment should define the balance between lane width and shoulder width when space is limited.



DOWNTOWN STREETS

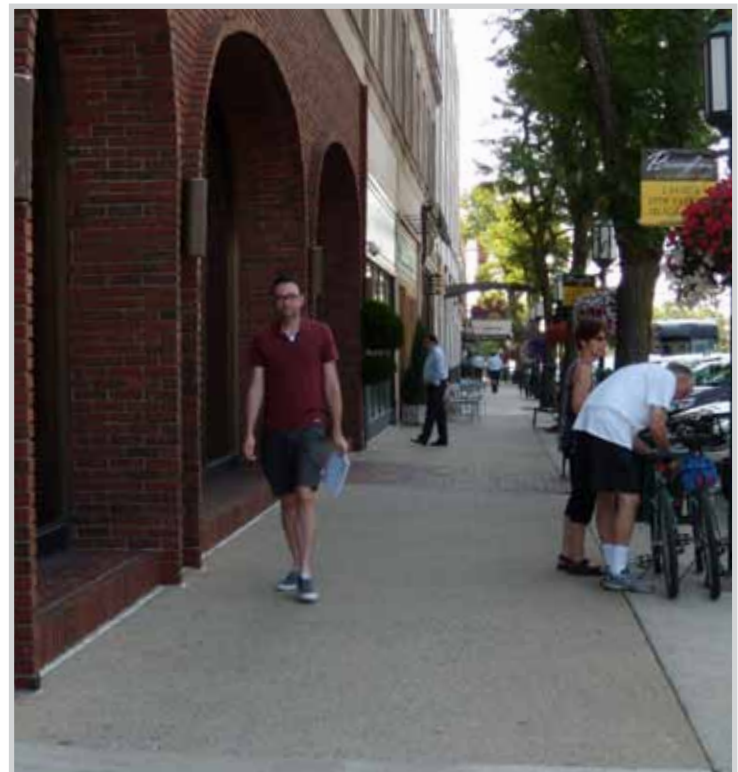
Downtown streets answer the significant demand of providing connections to major public facilities, local businesses and residential buildings. Downtown streets experience low traffic speeds and high volumes, have many access points, usually permit parking, and their width can vary from two to five lanes.

Observations

- The committee discussed the benefits of intersection bulb-outs and agreed that bulb-outs make pedestrian crossings shorter and thereby easier. They improve the visibility of pedestrians for motorists.
- Each community/Downtown Development Authority which has a downtown street under RCOC jurisdiction will likely soon have a Complete Streets policy/plan for their downtown area. It would be to RCOC's benefit to be aware of these policies and plans in order to enable the agency to attempt accommodating the community's downtown vision through a fitting road design during future road improvement activities.
- The committee also agreed that sharrows (pavement markings used where motorists and bicyclists share the road) can be an effective way to notify motorists to watch for bicyclists in the roadway.
- Many communities restrict bicycle riding in downtown locations, due to limited sidewalk width, high volumes of pedestrians and presence of outdoor seating.

Considerations

- To develop a “cookie-cutter” design practice for downtown streets would not be appropriate since each community and street has unique characteristics and circumstances. Collaboration between RCOC and the community is required to develop effective design solutions which respond to the needs and vision of the specific downtown area.
- Where sidewalk bicycle riding is restricted, the community should consider providing clear guidance to bicyclists on appropriate routes for bicycling, ensuring access to building entrances, bicycle parking, etc.



URBAN STREETS

Urban streets serve the major centers of activity of a city. Urban streets average 40 mph speeds, significant development density and wide pavement widths up to seven lanes including boulevards. They are designed for mobility and inter and intra-community linkages. On-street parking and direct access to adjacent properties are limited. Operation controls, e.g., traffic signals, are implemented to facilitate efficient movement of road users.

Observations

- Of the four road types discussed, urban streets have the highest need for dedicated facilities for bicyclists, pedestrians and transit users. This is due to many factors, including the high population of the surrounding area, high traffic volumes and the many driveways which are found along urban streets.
- Space within the right of way to be used for Complete Streets facilities is usually more limited in urban areas. Acquisition of additional right of way in urban areas can be costly.
- In older, established areas it is sometimes difficult to install new infrastructure.
- Conflicts with freeway crossings and free flow off ramps can be challenging when trying to add Complete Streets facilities.
- Right and left turn lanes are a concern on urban streets.



Considerations

- Connectivity is very important in urban areas. Connecting urban streets and residential streets should be considered.
- Traffic safety is a complex matter due to high vehicular and pedestrian traffic volumes and should be given priority at all stages of a project.
- Access Management is critical on urban streets and should be considered.
- Early discussions with local communities are important and should be included at the programming phase of a project.
- Road diets should be considered and implemented where possible. However, within Oakland County there may not be many locations at which it will be practical to implement a road diet. Traffic volumes in Oakland County have not dropped substantially.
- Maintenance of Complete Streets facilities needs to be discussed and agreed upon.
- Refuge islands and medians are helpful to pedestrians on streets with wide cross-sections. Two-stage crossing options should be considered.
- Separating bicyclists and pedestrians from the flow of traffic should be considered, possibly by use of physical barriers.
- RCOC should continue to coordinate transit stop locations with local transit agencies.



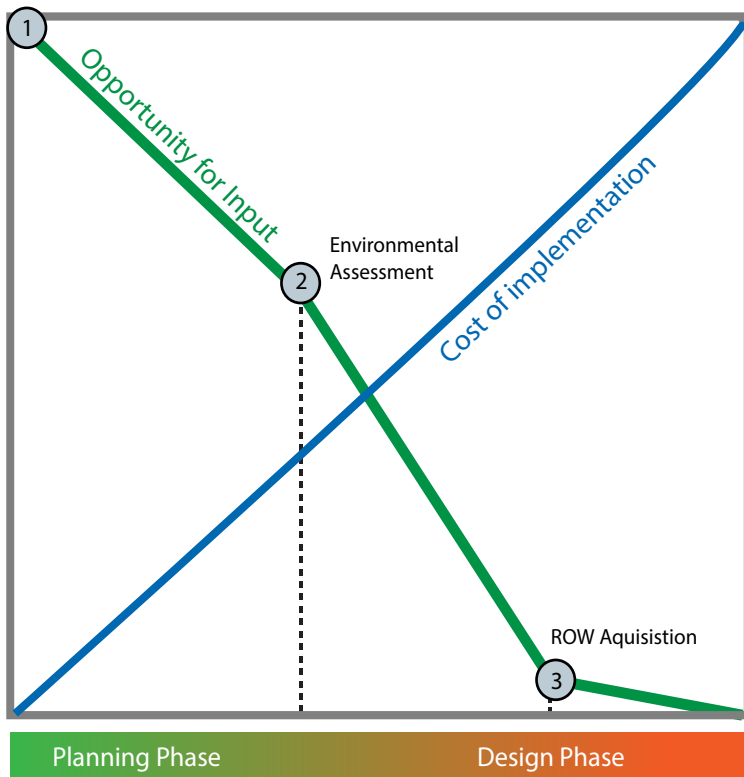
PLANNING CONCERNS

Earlier is always better. Opportunities for including Complete Streets facilities into road projects are much greater during the planning phase than during the design phase of a project. As a project progresses, it becomes more challenging to incorporate Complete Streets facilities. Early discussions with local communities need to include the vision community officials have for their community, the facilities they desire, a source of funding for these facilities and a plan for maintaining the facilities.



Stakeholder engagement is a key aspect of Complete Streets. There are many good reasons to seek stakeholder input including minimizing late changes to projects, developing partnerships, good customer service, timely conflict resolution and incorporation of the community's goals. The cornerstone of stakeholder engagement is to start early and provide an opportunity for stakeholders to have input at the earliest stage of project development. Opportunities to make changes dramatically diminish as a project nears design completion. By gaining the input of stakeholders during the conceptual stages of a project, mutual benefits are derived that make projects successful. Smooth project development minimizes design changes and balances community needs with transportation needs. Financial partnerships also contribute to the success of a project.

Opportunities for including Complete Streets elements into road projects are much greater during the planning phase, than during the design phase. Opportunities diminish greatly after right of way acquisition is complete, as seen in the graphic below.



1

GREATEST OPPORTUNITY FOR INPUT The planning phase consists of involvement with community master plan development, strategic planning meetings between RCOC and the local communities, preparation of concept estimates, preparation of funding applications and preparation of environmental studies. Each of these steps allows for considerable input by the communities to indicate how they would like to see Complete Streets included in the road plans. Once the Environmental Assessment is complete, it becomes more of a challenge to add Complete Streets facilities.

2

SOME OPPORTUNITY FOR INPUT The early steps in the design phase include a survey of the project area, preparation of a preliminary geometric design, preparation of a right of way plan and the actual acquisition of right of way. With the completion of each of these steps, the opportunity for input greatly decreases. After the right of way has been acquired, it becomes very difficult to add Complete Streets facilities to a project.

3

LIMITED OPPORTUNITY FOR INPUT Once the detailed design phase begins, which includes completion of final plans, drawing submittal to MDOT and the bid letting for the project, the opportunity to add Complete Streets to a project is very limited and costly.

Discussions with each community need to begin early in the planning process to determine which Complete Streets facilities are desired for each road project. Discussions need to include which facilities are desired, where these facilities should be located and what source of funding will be used for these facilities. RCOC needs to ensure that the vision of each community is recognized to the greatest degree possible, and every attempt is made to accomplish that vision.



CONNECTIVITY

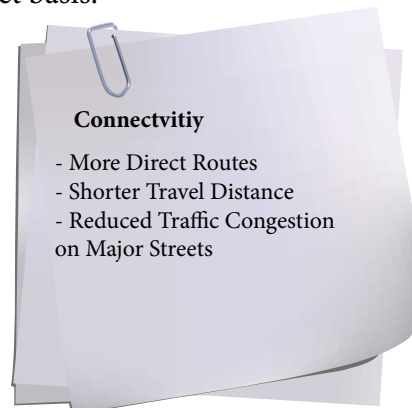
Recommendations regarding connectivity need to be determined and emphasized early in the site-plan review process. Connectivity should be encouraged between residential developments. Even more importantly, interconnection between residential developments, commercial developments, schools, parks and other municipalities is to be promoted. Oakland County has produced and every other year updates the OakRoutes map. The map shows all of the existing and proposed pathways in the county and could be a useful tool in considering connectivity and locating non-motorized facilities on road projects.

RCOC reviews subdivision plats and site plans when such are adjacent to roads under its jurisdiction. When appropriate, connectivity should be considered when these plans are reviewed in conjunction with local communities and transportation partners.



GATEWAY TREATMENTS

Gateways can be defined as a narrowing or perceived narrowing of the roadway, intended to cause drivers to slow down and recognize that they are entering an area of changed land use. There are several examples of gateways such as gates, curb bump-outs, medians, roundabouts, raised areas, rumble strips, bicycle lanes and changes in road surface, road markings, signing and lighting. Speed reduction techniques are applied at gateways to facilitate high-to-low speed transitions. Gateway treatments, in conjunction with other measures, are usually quite effective at calming traffic and improving safety. The transition zone is an important area used for informing the drivers of the change in the route and for reducing their travel speed. By modifying road design features such as prohibiting passing, adding taller signs and lighting, adding non-motorized facilities and by creating gateways, vehicle speeds can be reduced and road safety improved. Currently, RCOC includes many of these measures in road design principles on a project-by-project basis.



LIABILITY

The Michigan Governmental Tort Liability Act states that the government is immune from tort liability (civil damages), if the governmental agency is engaged in the exercise or discharge of a governmental function. Each employee, volunteer, member of a board, council, commission or task force is immune from tort liability for an injury unless the conduct amounts to gross negligence.

There are five exceptions to the immunity of a governmental agency: (1) the failure to maintain and repair highways; (2) the negligent operation of a government-owned vehicle; (3) dangerous or defective conditions in public buildings; (4) the performance of a proprietary (business) function; and (5) the ownership or operation of a government hospital excluding mental hospitals and hospitals operated within the prison system.

The exception to governmental immunity which is relevant to Complete Streets is the “highway exception” that has been interpreted narrowly by the Michigan Supreme Court to mean that each governmental agency shall maintain the traveled portion of the highway in reasonable repair so that it is reasonably safe and convenient for public travel. Specifically, road commissions are potentially liable for defects in the roadbed itself and not objects on the road bed, such as gravel and natural accumulations of snow and ice. There is no duty on the part of a road commission to maintain a sidewalk or any part other than the traveled portion of the road. Local municipalities, however, have jurisdiction and a corresponding duty to maintain sidewalks. There is no duty on the part of a road commission with respect to the design of a road, traffic signals or signage.

The current interpretations by the Michigan Supreme Court in the area of governmental immunity could change in the future with the possibility of impacting the practical aspects of Complete Streets.



SAFETY

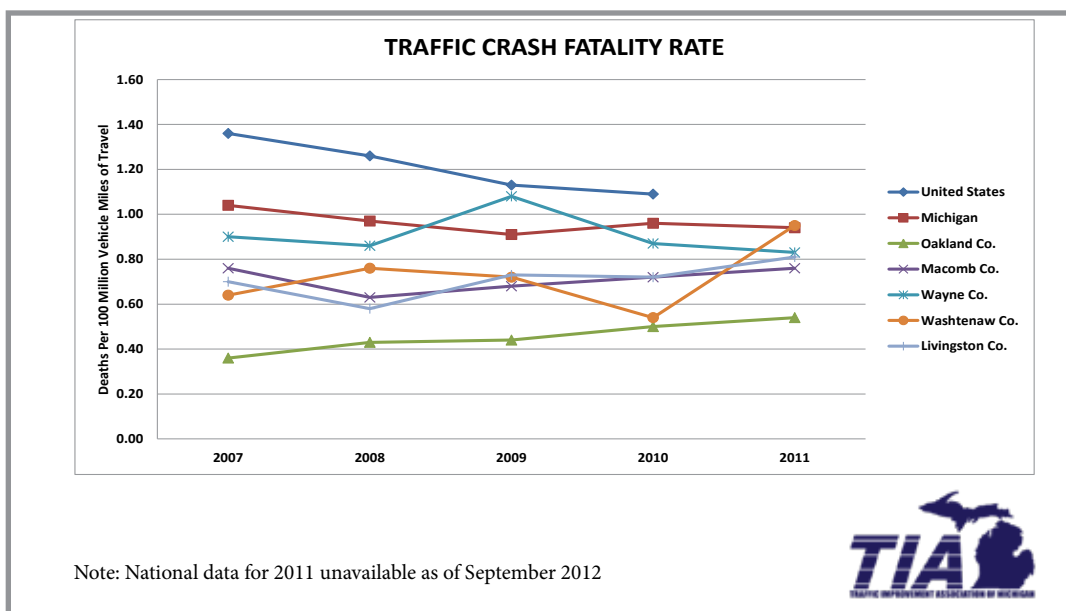
Safety is RCOC's number-one priority. RCOC has spent more than 30 years focusing on improving traffic safety. As a result, over that time Oakland County roads have gone from having more traffic fatalities than the state and national averages to far less, making them among the safest in the world. RCOC is committed to making Oakland County roads safe for all users.

There are multiple classes of users of the public road system, and RCOC must make decisions about the system based on the needs, desires and safety of all users. Decisions made in the best interest of one group of users might create negative consequences for other users. Consideration for the safety of all road users needs to be an integral part of the project planning and design process. RCOC recognizes American Association of State Highway and Transportation Officials (AASHTO) guides as resources for the safe design of Complete Streets facilities.

“Bicyclists are considered vehicle operators; they are required to obey the same rules of the road as other vehicle operators, including obeying traffic signs, signals and lane markings. When cycling in the street, cyclists must ride in the same direction as traffic.”

Traffic Safety Facts, NHTSA's National Center for Statistics and Analysis, June 2012

By working with safety partners such as the Traffic Improvement Association, law enforcement and local community planners, RCOC has experienced the lowest fatality rate in the State of Michigan over the past decade as shown in the chart below.



FUNDING

Complete Streets is not a grant program and does not offer or entitle any agency to funding for infrastructure improvements. Complete Streets is a concept in which multiple modes of transportation are considered and, when appropriate, addressed in some form as part of transportation projects.

-Michigan Department of Transportation



FUNDING SOURCES FOR ROAD IMPROVEMENT AND MAINTENANCE

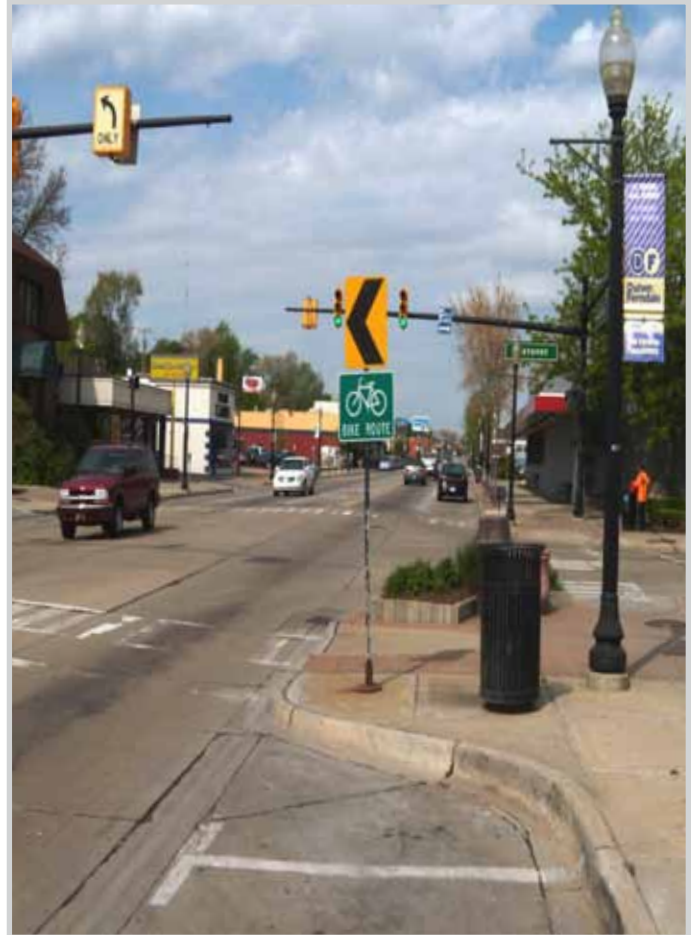
Road funding has traditionally come from three major sources: federal, state and local. There is a widening gap between Oakland County's road network needs and RCOC's ability to fund them through customary means.

The largest source of RCOC revenues come from the Michigan Transportation Fund (MTF) that depends on the state-collected gas tax and vehicle registration fees. Revenues generated by the gas tax remained stagnant since the gas tax was increased by four cents per gallon in 1997 until 2004 when it started to decline. Vehicle registrations fees have also declined in recent years.

RCOC relies on MTF dollars for all routine road maintenance and operating expenses. Due to shrinking MTF revenue and drastically increasing expenses, RCOC has been forced to reduce or eliminate most of its services.

Federal monies are the primary source of funding for major road improvement projects for RCOC. The Highway Trust Fund (HTF) funded by the federal gas tax will likely experience continued revenue shortfall.

Without a fundamental change in the approach to financing and managing transportation systems both on the national and state level, transportation agencies will not be able to provide reliable services to the traveling public.



ROAD FUNDING CRISIS AND ITS CONSEQUENCES

In recent years, RCOC drastically reduced its expenses by eliminating nearly 25 percent of its fulltime positions, merging departments, deferring equipment purchases, intensifying preventive fleet maintenance activities, privatizing services when it made good business sense and implementing numerous best practices.

Balancing staff level, equipment readiness and roadwork has become increasingly difficult for RCOC, and a considerable list of unmet needs exists in all areas.



DETERIORATING INFRASTRUCTURE ELEMENTS COMPETE FOR FUNDING

The infrastructure funding crunch has arrived at a critically difficult time when great needs conflict with depleted resources, and the gap between the available funds and infrastructure needs is widening. After reviewing the 2011 pavement condition data, the Michigan Transportation Asset Management Council (TAMC) concluded that Michigan's roads are deteriorating at an increasingly rapid rate. Over one-third of roads on the federal-aid eligible road system are now in poor condition. Continued deterioration of the road system will have significant financial and economic consequences, because the cost of repairing roads in poor condition is much higher than the cost of preventive maintenance performed on roads in good or fair condition.

The data also revealed that major arterial roads are in better shape than minor roads such as connectors and subdivision streets. A transportation system can be safe and efficient only, if it provides both essential functions, i.e. mobility and accessibility, by operating on facilities in good condition. In addition to paved road surfaces, many other elements of the road system are in great need of repair. Traffic signs, guardrails, pavement markings and traffic signals require regular maintenance and periodic replacement. Funding for them has also been shrinking, and their condition has been worsening. As available moneys are decreasing, the different elements of the road system are forced to compete against each other for funding.

Complete Streets implementation, as a component of an improved, well-functioning transportation system, has entered the depleted scene of transportation financing where it must compete for limited funding. State and local leaders are challenged to think in new ways about how to plan and fund the infrastructure that will provide for future economic growth of the area.



PAVEMENT CONDITIONS ON RCOC ROADS

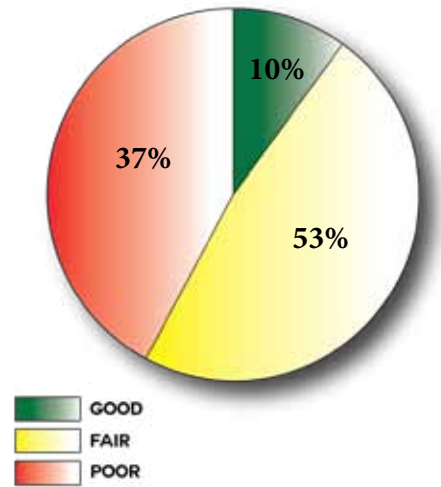
The condition of the roads in Oakland County is similar to the condition of all roads in Michigan. Using the same rating scale used by TAMC, 37 percent of RCOC's federal-aid eligible roads are in poor condition. Pavement condition data show that the lowest level of federal-aid roads (collectors) are in the poorest condition. Collector roads provide accessibility to homes, businesses and other attractions.

Needs of non-motorized traffic are the highest on minor arterials and collectors in addition to local roads. Sadly, these road categories are in the worst condition. Local roads are not eligible for federal aid and in Oakland County roughly half of them are not paved. Data indicate that the condition of the paved non-federal-aid system is significantly worse than that of the paved federal-aid system.

The percent of roads in poor condition throughout Oakland County will continue to increase in the coming years unless additional road funding is identified. The current financial situation of road funding in Oakland County has forced RCOC to reduce the level of service it is able to provide.

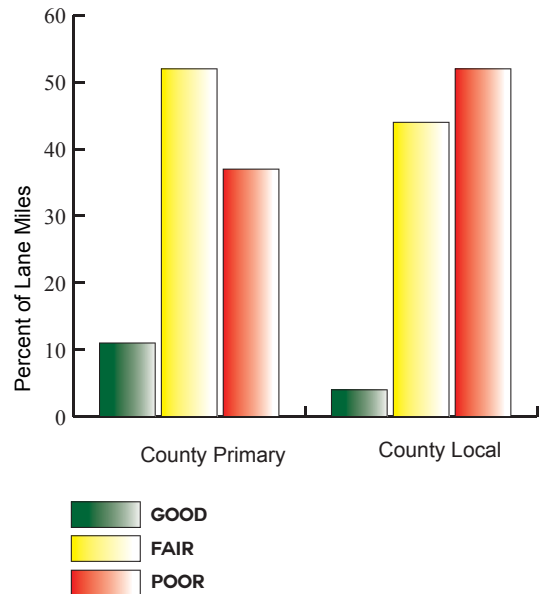


CONDITIONS OF OAKLAND COUNTY FEDERAL-AID ELIGIBLE ROADS (2011)



Source: TAMC

CONDITIONS OF RCOC PRIMARY AND LOCAL ROADS (2011)



Source: TAMC

The alarming decline in condition of Michigan's infrastructure affects everyone – from businesses that rely on the transportation network to transport goods and services; from tourists visiting or traveling through the state; from citizens who expect safe and convenient access to work and school; to non-motorized road users who expect safe and convenient access to work and school.



Funding Complete Streets poses a great challenge amid the current shortage of transportation funds. In the early planning stage of a road project, the community’s expectations regarding Complete Streets elements should be evaluated and aligned with the available funds. The success of a project can be ensured by the partnership of RCOC and the community in identifying and securing possible funding sources. A commitment by the community to the maintenance of the Complete Streets elements of the project after completion is another factor of success. Potential funding sources for Complete Streets include the following:

FEDERAL	STATE	COUNTY	LOCAL	PRIVATE
<p>Transportation Alternatives - Funds identified to help expand transportation choices and enhance the transportation experience.</p> <p>Safety funds - Funds which are used to improve the safety of our roads.</p> <p>Congestion Mitigation and Air Quality (CMAQ) - Funds for reducing congestion and improving air quality.</p> <p>TIGER Grants – Funds to improve transportation infrastructure and generate economic recovery.</p> <p>Safe Routes to School – Funds for empowering communities to make walking and bicycling to school a safe and routine activity.</p> <p>Transit funds – Funds for transit improvements.</p> <p>Surface Transportation Program - Funds to improve the condition and performance of federal-aid highways</p> <p>Additional sources via FHWA: http://goo.gl/hxiyF</p>	<p>Economic Development grants – Funds to promote the standard of living and economic health of an area.</p> <p>Act 51 Michigan Transportation Funds – State appropriations for Michigan transportation programs.</p> <p>Healthy Living grants – Funding to increase healthy, active living and reduce chronic disease rates.</p> <p>Parks and recreation funding – Funding for the development of land for public outdoor recreation.</p> <p>Additional sources via MDOT: http://goo.gl/9BpJo</p>	<p>Economic Development grants - Funds to promote the standard of living and economic health of an area.</p> <p>Act 51 Funds - State appropriations for Michigan transportation programs.</p> <p>Millage – A tax on property that the property owner is required to pay.</p> <p>Tourism Initiatives – Funds to promote tourism in the surrounding area.</p> <p>Health Department – Funds to promote healthy, active living.</p> <p>Special Assessment – A unique charge that government units can assess against real estate parcels for certain public projects.</p> <p>Additional sources via CRAM: http://goo.gl/xkgjy</p>	<p>Millage – A tax on property that the property owner is required to pay.</p> <p>Special Assessment – A unique charge that government units can assess against real estate parcels for certain public projects.</p> <p>Act 51 funds - State appropriations for Michigan transportation programs.</p> <p>Downtown Development Authorities - Tax increment financing used to upgrade downtown infrastructure.</p> <p>Bonding – Bonds purchased by citizens to fund projects.</p> <p>Corridor Improvement Authorities - Tax increment financing used to upgrade a specific transportation corridor.</p> <p>Additional sources via CRAM: http://goo.gl/xkgjy</p>	<p>Foundations – Organizations which provide funding for charitable purposes.</p> <p>Developer contribution – Developers agree to include Complete Streets facilities in their developments.</p> <p>Naming rights - a financial transaction and form of advertising whereby a corporation or other entity purchases the right to name a facility.</p> <p>Sponsored Adoptions – Organizations volunteer to maintain a facility.</p> <p>Additional sources via AASHTO: http://goo.gl/h4OUq</p>



CONCLUSIONS

Over the past year, the RCOC Complete Streets Review Committee took a comprehensive look at the challenges and opportunities surrounding Complete Streets. The committee evaluated issues such as liability, funding, maintenance, connectivity, local involvement, environmental concerns and specific user needs. Various street types were studied to determine how Complete Streets concepts might apply to each.

The committee reached a number of conclusions regarding how RCOC can go forward with implementing Complete Streets. The committee concluded that a two-fold approach consisting of **principles** and **actions** would be the most effective. Principles are ideas about Complete Streets that the committee agreed are important. Actions are specific tasks the committee agreed should be undertaken in the near term and continued for the long term.



PRINCIPLES

- The State Transportation Commission Policy on Complete Streets will be a valuable resource and guide for Complete Streets efforts at the local level.
- Complete Streets accommodate the needs of all legal road users including motorists, bicyclists, pedestrians, disabled persons, equestrians, transit users and commercial vehicles.
- Complete Streets are beneficial because they can enhance safety, promote better health, improve local economic conditions, promote tourism, improve quality of life and provide multiple transportation options for users.
- The needs of all legal road users are understood to be important and should be considered on all road projects undertaken by RCOC.
- Complete Streets accommodations should only be implemented if safety is not compromised.
- Accommodations for all legal road users should be implemented when said accommodations are needed and have been determined by RCOC to be safe, financially feasible, environmentally responsible, consistent with local community desires, do not create undue liability exposure to RCOC and can be readily maintained without undue hardship and undue expense.
- All roads and road improvement projects are unique and present their own challenges, constraints and opportunities. Therefore, it is understood that the methods of accommodation will vary from project to project, and what works in one context may not work in another.
- Complete Streets accommodations should be planned as a network of connected, multimodal transportation facilities so that logical origins and destinations can be connected.
- Every community RCOC serves has its own unique perspective on the subject of Complete Streets and their interest in partnering with RCOC on Complete Streets efforts will vary.
- RCOC will respect the desires of local communities when considering the provision of Complete Streets accommodations.
- Input from local communities regarding Complete Streets is needed as early in the project planning phase as possible.
- The functional classification of the roadway, as defined by the Federal Highway Administration, needs to be considered when deciding which Complete Streets accommodations would be the best fit for a specific road improvement project.
- RCOC will expect local financial participation in the provision of Complete Streets accommodations.

“Responsibilities for operation and maintenance of facilities in MDOT right of way shall be determined and outlined prior to construction of such facilities, except where a pre-existing maintenance agreement is in place. Maintenance agreements will be required as a provision of the entire project. Local responsibility for Complete Streets facility maintenance, in particular for facilities outside the travel portion of a street, such as transit and non-motorized facilities, will be critical for many projects.”

State Transportation Commission Policy on Complete Streets, MDOT, July 26, 2012



ACTIONS TO BE TAKEN BY RCOC



- RCOC will take the needs of all legal road users into consideration with respect to Complete Streets during all project phases including planning, scoping, road safety reviews, design, construction and maintenance.
- RCOC will work with local communities during strategic planning and project scoping to determine community interest and capacity to help fund Complete Streets efforts.
- RCOC will highlight the importance of connectivity between neighborhoods and communities when reviewing community subdivision plats and site plans.
- RCOC will regard connectivity as a vital consideration when Complete Streets facilities are planned on the RCOC road network.
- RCOC's Design Division in cooperation with local communities will add Complete Streets as one of its design considerations. The Design Division will note in the file the Complete Streets requests and/or other accommodations included in the project, as well as note other related issues and/or constraints.
- RCOC will explore possible ways of posting on-line the current status of road projects and allow for on-line public input/comments on these projects.
- RCOC recognizes the 2012 AASHTO Guide for Development of Bicycle Facilities and the U.S. Access Board's Public Rights-of-Way Accessibility Guidelines (PROWAG) as resources. RCOC will consider future AASHTO publications regarding planning, design and operation of non-motorized facilities.
- RCOC will coordinate with other county and state agencies by continuing to participate on committees concerned with non-motorized transportation.
- RCOC will stay abreast of developments in the field of Complete Streets.
- RCOC will provide a copy of this report to all RCOC department heads, division heads and superintendents who have influence over the provision of Complete Streets accommodations and provide training as appropriate.
- RCOC will maintain an in-house multi-disciplinary Complete Streets committee to periodically review and discuss Complete Streets efforts and processes.
- RCOC will consult the regional non-motorized plan, as well as county and local plans such as master, transportation, non-motorized, Complete Streets, DDA and recreation plans.



ACTIONS SUGGESTED FOR PARTNERING COMMUNITIES

- Communities should define how they want Complete Streets implemented in their community; whether by incorporation into their master plan, by an ordinance, or by a resolution. Communities need to ensure that their plans are current and up-to-date.
- Communities should communicate their commitment to the level and method of implementing Complete Streets to Oakland County’s planning department and RCOC.
- Communities should indicate at the strategic planning meetings which RCOC holds with local communities how the community would like to see Complete Streets elements included on RCOC roads located in the community.
- Communities should provide meaningful input for each road project as early as possible in order to assure the realization of the community’s vision for the project without causing delay and cost increase for the project. Input at the earliest stages of a project can influence general planning issues, geometrics and major aesthetics. Continuous input at later stages is also required but should be limited to minor aesthetic changes, specific details and maintenance of traffic.
- Communities should participate in the concept definition of Complete Street facilities desired for each project.
- Communities should partner with RCOC to fund the Complete Streets facilities desired by their community. Funding for Complete Streets facilities could be provided through local sources, developers, foundations, federal transportation enhancement programs and other non-traditional public sources.
- Communities should agree on a commitment to the maintenance of the proposed Complete Streets facilities.



“Quality Life through Good Roads... We Care” This is RCOC’s motto.

The RCOC Complete Streets Review Committee offers this report to help guide RCOC and its partnering communities as they strive to help all users of the Oakland County transportation network to experience quality life through good roads...complete roads.

