COUNTY COUNCIL OF BALTIMORE COUNTY, MARYLAND
Legislative Session 2013, Legislative Day No. 20

Resolution No. 126-13

Councilmembers Quirk, Marks & Oliver

By the County Council, December 2, 2013

A RESOLUTION of the Baltimore County Council adopting the Baltimore County Complete Street Policy.

WHEREAS, the Baltimore County Master Plan 2020 provides a guide for ensuring that the County's urban communities are sustainable communities that are compact, walkable, bikeable, and transit-oriented; and

WHEREAS, the Baltimore County Council adopted the Eastern Baltimore County Pedestrian and Bicycle Access Plan in 2006 (Res. 87-06); and

WHEREAS, the Council adopted the Western Baltimore County Pedestrian and Bicycle Access Plan in 2012 (Res.83-12); and

WHEREAS, these plans provide recommendations for improved pedestrian facilities, on-road bicycle facilities, and shared use paths; and

WHEREAS, in 2011, the Council established the Baltimore County Pedestrian and Bicycle Advisory Committee (Bill 2-11) and charged the Committee with the duty to recommend a complete streets policy that provides guiding principles to be considered in all development and capital projects to ensure that these projects promote walking, bicycling, and transit use in a safe and efficient manner for all users; and

WHEREAS, the Committee submitted its 2012 annual report to the County Executive and County Council which, among other things, recommends the adoption of a Complete Street Policy for Baltimore County; and

WHEREAS, the County Council has reviewed the recommended Complete Street Policy and held a public hearing thereon; now, therefore, be it

RESOLVED by the County Council of Baltimore County, Maryland, that the Baltimore County Complete Street Policy, a copy of which is attached hereto as Exhibit A, be and it is hereby adopted as a guide for the development of all public and private roadways in the County with the objective of creating a safe, multimodal transportation system within healthy, walkable, bikeable, and livable communities.

r12613.wpd

Exhibit A

Appendix E

Recommendations for a Comprehensive Complete Street Policy

Baltimore County Pedestrian and Bicycle Advisory Committee
Approved November 13, 2012

Baltimore County Complete Street Policy

BACKGROUND

In the US over the last 50 years, as the interstate highway system and suburban road networks have been constructed, the movement of motor vehicles has been prioritized with little thought given to other forms of transportation. However, more recently, multi-modal roadway design philosophies have been emerging to better balance the speed and convenience demands of motorists with the needs of pedestrians, bicyclists, transit riders, and other users.

One of the first such philosophies that has been broadly accepted is the notion of "Context Sensitive Solutions." This concept developed as a reaction to the building of highways through cities and towns in a way that moved vehicles quickly and efficiently, but undermined the qualities that made the communities thrive. Widening streets to accommodate traffic often involved tearing down the historic and cultural amenities that contributed to a community's identity as a place. The wide streets designed for fast moving vehicle traffic degraded the pedestrian environment by producing unpleasant levels of noise and exhaust fumes and inhibited the ability of people to cross the street, destroying the social and economic value of the community's "street life."

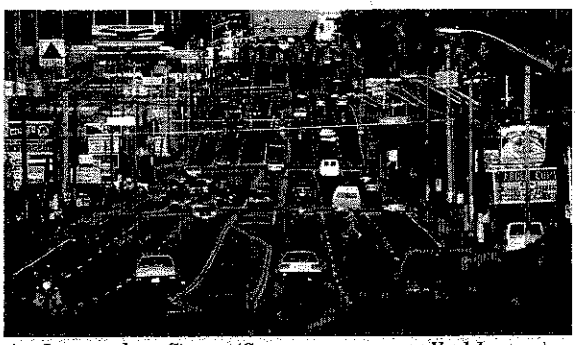
The Context Sensitive Solutions (CSS) philosophy attempts to address these negative impacts. Using a CSS approach, transportation planners work with local community groups to design roadways that are more sensitive to the character and economic values of the community the roadway passes through, preserving and enhancing the social, cultural and natural assets of the surroundings, while at the same time, providing for vehicle mobility and safety.

Separately from the development of the CSS concept, other philosophies arose regarding the provision of pedestrian and bicycle facilities. In 1990, the federal government enacted the Americans with Disabilities Act that required roads, parking and buildings to be designed to accommodate access by the physically disabled.

In the early to mid 1970s, interest in bicycling as a form of transportation began to grow. Oregon was the first state to require pedestrian and bicycle accommodation as part of roadway design. Other states and local jurisdictions followed suit as bicycle use gained momentum in response to rising gasoline prices. Especially since the 1990s, many jurisdictions, including the State of Maryland, have required "the routine accommodation" of bicycle facilities in the design of state roads.

The term "Complete Street" was suggested by a bicycle advocate in 2003 as a replacement for "routine accommodation." But the term was quickly embraced by smart growth advocates as a fundamental principle in creating Livable Communities, and it took on a more comprehensive meaning to include all users of the street, including

pedestrians, motorists and transit riders as well as bicyclists. The Livable Communities concept also goes beyond CSS in integrating land use and transportation elements. It envisions compact communities where homes, schools, shopping, employment centers, recreation areas and other destinations are connected by a network of Complete Streets, stressing the active transportation modes, walking and cycling, to support a rich street life. Complete Street design can include sidewalks, bike lanes, special bus lanes, transit shelters, medians, crosswalks and amenities such as landscaping and street furniture that create a more pleasant and comfortable human-scaled environment, as appropriate to the surrounding land uses.



An Incomplete Street (Source: www.walkable.org)

A Complete Street (Source: Eurist e.V.'s Photostream, www.flickr.com)

The National Complete Streets Coalition was founded in 2005 by a variety of advocacy and trade organizations, including AARP, the American Planning Association, the American Society of Landscape Architects, and the American Heart Association. Its mission is to promote the adoption of a Complete Street policy by local jurisdictions, which "ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind — including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities."[1]

The movement has grown across the US, and has also spread to Canada and Australia. In the US, over 200 jurisdictions have adopted Complete Street policies, reflecting the desire of many communities "to reframe their future around people instead of cars."[2]

Existing Baltimore County Transportation Policies

The development of Baltimore County was no different than that of other American suburban communities. Its past land use and transportation planning practices have created a substantially auto-oriented environment. As with other communities around the country, the County's approach to land use and transportation is evolving.

[1] www.completestreets.org
[2] www.pps.org/blog/are-complete-streets-incomplete/

- In 2006, Baltimore County adopted the Eastern County Pedestrian and Bicycle Access Plan, which provides recommendations for retrofitting the County's roadways for increased bicycle and pedestrian use in the urban areas of Council districts 5, 6 and 7. The plan was the first phase of a county-wide plan. A draft of the second phase for the western urban County has been approved by the Baltimore County Planning Board and is awaiting vote by the County Council. The third and final phase of the plan for the rural northern County will be undertaken in the future.

- The County's Master Plan 2020, adopted in October 2010, provides a framework for ensuring the County's future urban communities are sustainable communities—compact, walkable, bikeable and transit-oriented—calling for expansion of pedestrian and bicycle policies.

- The County Public Works Design Manual, revised in August 2010, stresses a Context Sensitive Design approach that considers all transportation modes, and includes updated standards for pedestrian and bicycle facilities.

- In February 2011, the Baltimore County Council enacted a bill to create a Pedestrian and Bicycle Advisory Committee to work with County agencies in the development of a comprehensive pedestrian and bicycle program. The bill charges the PBAC with developing a Complete Street Policy for the urban areas of the County for consideration by the County Executive and County Council. In addition to a Complete Street policy for County roadway improvements, the bill also requires the policy to address other County capital improvements such as parks and schools, land use planning, and safety and encouragement programs.

SUGGESTED COMPLETE STREET POLICY FOR THE URBAN AREA OF BALTIMORE COUNTY

Definitions:

Complete Streets are public or private roadways that provide safe and convenient access for users of all ages and abilities, including pedestrians, bicyclists, transit riders and motorists, and are conducive to the efficient movement of people.

Pedestrian facilities may include sidewalks, off-road sidepaths and shared use paths, accessible curb ramps, crosswalks, signals, as well as supportive improvements such as benches and pedestrian-scale street lighting.

Bicycle facilities may include bike lanes, cycle paths, sharrows, bicycle boulevards, off-road sidepaths, shared use paths, benches for resting, lighting, bicycle racks, lockers and appropriate signage.

Transit stop facilities may include a graded loading/discharge area, free of obstructions adjacent to the sidewalk. In areas with a high amount of use, supportive improvements may be included such as benches, shelters, lighting, bicycle racks and lockers.

Purpose:

- Previous development decisions, land use and transportation planning and road design have had the unintended consequence on the daily quality of life of Baltimore County citizens of encouraging widespread dependence on motor vehicles for even the very shortest of trips. The incorporation of Complete Street principles into new road and land use development, redevelopment and retrofitting multimodal facilities into existing communities where feasible and appropriate, will provide additional transportation options for Baltimore County citizens.

- Complete Streets provide additional benefits as well. They can help to reduce roadway congestion, increase transportation network capacity, improve air quality, improve community health, enhance community aesthetics, augment economic growth, and increase community stability by providing accessible and efficient connections between home, school, work, recreation and retail destinations. These benefits are more important to the future economic and environmental sustainability of the County than reliance on motor vehicle mobility alone.

- Creating healthy, walkable, bikeable and livable communities helps keep Baltimore County competitive in the global competition for high quality businesses and motivated, creative workers who consider transportation and recreation options an essential part of a healthy community.

- While Complete Streets may be achieved through single projects or incrementally through a series of smaller improvements or maintenance activities over time, a comprehensive County policy that provides for coordination and cooperation among many different agencies will produce results more efficiently and effectively. Creating a safe, multimodal transportation system will require not only infrastructure improvements but also supportive educational, encouragement, enforcement, and evaluation programs.

Policy Elements

The following practices, applicable to the area of Baltimore County within the Urban Rural Demarcation Line, describes an effective Complete Street policy.

(1) The following applies to the entire Complete Street Policy:

a. Complete Street design principles for constructing facilities and environments that support pedestrian, bicycle and transit access are described in the Public Works Design Manual, the Comprehensive Manual of Development Policies, and the adopted master plan and its amendments.

b. The decision of whether or not to make a pedestrian, bicycle or transit improvement as well as the type of design that is selected, is context sensitive, and is based on its

appropriateness to the situation and is in accordance with community needs and desires.

c. The decision to make an improvement or program enhancement is weighed against other demands competing for a fixed pool of County resources, which may affect the scheduling of the pedestrian, bicycle or transit improvement or program enhancement.

(2) The following applies to the road corridors and publicly accessible facilities planned, constructed, reconstructed, paved or repaved, newly marked or re-marked due to paving or repaving, or maintained by Baltimore County government:

a. For road and bridge projects undertaken by the Department of Public Works, the department provides access by pedestrians, bicyclists, and transit riders in addition to motorists following Complete Street principles in planning, design, construction, reconstruction, maintenance of traffic, paving or repaving, pavement marking of roads that have not been previously marked, and re-marking of roads that are being repaved.

b. For publicly accessible County government facilities, including, but not limited to, schools, libraries, senior, recreation and community centers, and health clinics; the appropriate agency follows the Complete Street principles in planning, design and construction of new facilities or major reconstruction of existing facilities.

c. Bicycle parking for visitors and employees is provided at all new publicly accessible County government facilities including, but not limited to, schools, recreation centers, libraries, senior centers, community centers, health clinics, and parks with permanent improvements. Bicycle parking for visitors and employees is provided at all such existing publicly accessible County government facilities, where feasible.

(Older County buildings should be surveyed to determine cost factor for Complete Street Compliance. Those facilities should then be prioritized and completed as budget or grants allow.)

d. Compliance with Complete Street principles by County government agencies is exempted in certain situations where:

i. The inclusion of pedestrian, transit and/or bicycle access is prohibited by law.
ii. The existing right-of-way area is not adequate to accommodate a pedestrian, bicycle or transit facility and right-of-way widening is not included in the project, in which case a greater effort may be necessary to accommodate those users elsewhere in the same transportation corridor.

iii. Use of a pedestrian, bicycle or transit facility is not anticipated due to lack of current and future need except if the facility is included in the Eastern and Western Pedestrian Bicycle Access Plans, or other adopted plans.
iv. The cost of providing a pedestrian, bicycle or transit facility clearly outweighs expected use.
v. Unreasonable delays would occur when performing routine maintenance and other minor operations.
vi. For on-road bicycle facilities, the paved roadway width is less than 30 feet, unless the facility is included in the Eastern or Western Pedestrian Bicycle Access Plans, or other adopted plan.
vii. For transit user improvements, a road is not served, or planned to be served, by transit.
viii. Other reason as deemed by the director of the responsible agency that providing a bicycle, pedestrian or transit facility would not be in the best interest of the citizens of Baltimore County, such as lack appropriateness to the neighborhood context, citizen opposition, or need for funding flexibility.

e. When a County construction or reconstruction project does not follow Complete Street principles, the director of the responsible agency notifies the Pedestrian and Bicycle Advisory Committee (PBAC) of the decision and provides a written explanation using a checklist developed by the PBAC. The agency compiles an annual summary (based on the County's fiscal year) of total road miles constructed, reconstructed, repaved, and remarked and the total road miles where Complete Street pedestrian and bicycle improvements were implemented. This summary is incorporated into the Annual Report of the PBAC, which is required by law to be submitted to the County Executive and the County Council.

(3) The following applies to development projects:

a. The Department of Permits, Approvals and Inspections, the Department of Public Works and the Department of Planning review development projects for the inclusion of Complete Street principles.

b. The director of the appropriate Baltimore County government agency may determine, after review by the director or his or her designees, that the project is exempted from following the Complete Street principles, including under circumstances where:

i. The inclusion of pedestrian, transit and/or bicycle access is prohibited by law.
ii. For on-road bicycle facilities, the planned paved roadway width is less than 30 feet, unless the facility is included in the Eastern or Western Pedestrian Bicycle Access Plans, or other adopted plan.

iii. For transit user facilities, a road is not served, or planned to be served, by transit.
iv. Other reason as deemed by the director of the responsible agency that providing a bicycle, pedestrian or transit facility, or granting a waiver for such a facility, would not be in the best interest of the citizens of Baltimore County.

c. The director of the appropriate Baltimore County government agency may determine, after review by the director or his or her designees, to grant a waiver of pedestrian and/or bicycle facilities, including under circumstances where:

i. Use of the pedestrian and/or bicycle facility is not anticipated due to lack of need or connectivity.
ii. Other reason as approved by the director of the responsible agency.

d. When pedestrian and/or bicycle facilities are waived, a dedicated fee-in-lieu payment in the amount of the present cost to construct the waived facility, is paid by the developer and is placed in a distinct revenue account for local open space waiver fees; and the land area for the pedestrian and/or bicycle facility is reserved, pre-graded and free of impediments such as street trees, fences, signs, utility appurtenances, etc., with appropriate public access rights recorded, for future construction by the County. The project's storm water management facilities are designed to manage the impact of the future paved area.

e. When a project receives an exemption from or a waiver of the Complete Street principles, the director of the appropriate agency notifies the PBAC of the decision, and provides written explanation using a checklist developed by the PBAC.

f. The Department of Recreation and Parks and the Department of Permits, Approvals and Inspections may allow pedestrian and bicycle facilities to fulfill a portion of active local open space requirements.

(4) An annual assessment of Complete Streets as provided in Section (2)e is used to determine if an adequate level of implementation is occurring to meet the goals of the PBAC and to introduce amendments to the County code, zoning and development process so that the intent of the legislation is fulfilled.

(5) The Department of Planning includes a sustainable transportation section in all of its local area plans, addressing appropriate accommodations for pedestrians, bicyclists and transit users in addition to motorists.

(6) The Police Department undertakes enforcement and education activities to facilitate shared use of streets by pedestrians, bicyclists, transit users and vehicular traffic.

(7) The Health and Human Services Department promotes healthy lifestyles that include walking and bicycling through its programs.

(8) The Baltimore County Public Schools and the Department of Recreation and Parks collaborate with the Police Department in educational activities related to walking and bicycling laws and safety practices, and the Health and Human Services Department in promoting healthy lifestyles that include walking and bicycling.

(9) The PBAC encourages the creation of partnerships and coordination of efforts with other governmental and private entities in providing pedestrian, bicycle and transit user facilities and outreach.

(10) Baltimore County Public Schools, and the Departments of Public Works, Planning, Police, Recreation and Parks, and Health and Human Services, through their representatives on the PBAC, annually report on their activities in creating walking, bicycling and transit user facilities, and on education, encouragement and enforcement programs, to the PBAC for inclusion in the committee's annual report.

Web References:

Wikipedia, for references on Complete Streets and Context Sensitive Design (www.wikipedia.org)

National Coalition of Complete Streets (www.completestreets.org)

Polices for Public Spaces (http://www.pps.org/blog/are-complete-streets-incomplete/)

New York Bicycling Coalition (www.nybc.net/advocacy/complete-streets

Eurist e.V.'s Photostream (www.flickr.com/photos/38607288@N03/3836097829 (photo of Stockholm Complete Street)

Cover illustration: http://www.tampasdowntown.com/learn/monday-morning-memo/archive/mmm---021510.aspx

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http://www.rockvillemd.gov/transportation/pdf/complete_streets_policy_adopted.pdf

http://www.completestreets.org/webdocs/policy/cs-md-baltimore-resolution.pdf

Baltimore County Complete Street Checklist
FOR COUNTY PROJECTS

In accordance with ___, all Baltimore County road construction and rehabilitation projects inside the Urban Rural Demarcation line that do NOT comply with the County's Complete Street policy are required to complete this checklist. Send the completed checklist to the Department of Planning, MS 4101, for inclusion in the annual report of the Pedestrian and Bicycle Advisory Committee.

Note: a completed checklist is not required for county repaving and restriping projects on roads that are not recommended for bicycle improvements by the Eastern or Western Pedestrian and Bicycle Access Plans.

Your name _____
Agency _____ **Title** _____
Date _____ **Phone** _____

Name of Project _____
Location of Project _____
Type of Improvement: ___New Design/Construction ___Rehabilitation

FACILITY NOT PROVIDED
Please check all that apply.

No.	Walking	Bicycling	Transit	
1				Inclusion of pedestrian, transit and/or bicycle access is prohibited by law
2				Existing right-of-way area is not adequate to accommodate facilities and right-of-way widening is not included in the project
3				Lack of current and future need except if the facility is included in the Eastern or Western Pedestrian Bicycle Access Plans, or other adopted plan—provide an explanation below
4				Cost of providing the facility clearly outweighs expected use—provide an explanation below
5				Unreasonable delays would occur when performing routine maintenance and other minor operations
6				For bicycle facilities, the paved road width is less than 30 feet, unless the facility is included in the Eastern or Western Pedestrian Bicycle Access Plans, or other adopted plan
7				For transit user facilities, the road is not served, or planned to be served, by transit
8				Other reason as deemed by the director of the responsible agency that providing the facility is not in the best interest of the County, such as inappropriate to the neighborhood context, citizen opposition, or need for funding flexibility—provide an explanation below

Explanation for No. 3, 4, or 8: _____

If No. 4 or 8 is checked due to the need for funding flexibility, what is the cost for providing the pedestrian, bicycle and/or transit facility? _____

DESIGN CONFORMANCE

If pedestrian, bicycle, and/or transit facilities are provided, but do not meet the standards and guidelines of the Public Works Design Manual or the Complete Streets section of the Comprehensive Manual of Development Policies, please explain the deviation, and the reason for the deviation.

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Baltimore County Complete Street Checklist
FOR DEVELOPMENT PROJECTS

In accordance with ___, please complete this checklist for all development projects inside the Urban Rural Demarcation line that do NOT comply with the County's Complete Street policy. Send the completed checklist to the Department of Planning, MS 4101, for inclusion in the annual report of the Pedestrian and Bicycle Advisory Committee.

Your name _____
Agency _____ **Title** _____
Date _____ **Phone** _____

Name of Project _____
Location of Project _____

EXEMPTED FACILITY
Please check all that apply.

No.	Walking	Bicycling	Transit	
1				The inclusion of pedestrian, transit and/or bicycle access are prohibited by law
2				For bicycle facilities, the paved road width is less than 30 feet, unless the facility is included in the Eastern or Western Pedestrian Bicycle Access Plans, or other adopted plan
3				For transit user facilities, the road is not served, or planned to be served, by transit
4				Other—please explain below

If No. 4 is checked, please explain: _____

WAIVED FACILITY
Please check all that apply.

No.	Walking	Bicycling	Transit	
5				Lack of anticipated need or connectivity
6				Other—please explain below

If No. 6 is checked, please explain: _____

For items which are checked, is the area for the facility pregraded, free of obstructions, and future impervious area included in stormwater management calculations for future construction by the county?

_____ Yes
_____ No

If no, why not? _____

_____

Waiver fee assessed: _____
(Waiver fee is to be dedicated to sidewalk and bicycle facility construction and deposited in a distinct revenue account for Local Open Space).

DESIGN CONFORMANCE

If pedestrian, bicycle, and/or transit facilities are provided, but do not meet the standards and guidelines of the Public Works Design Manual or the Complete Streets section of the Comprehensive Manual of Development Policies, please explain the deviation, and the reason for the deviation.

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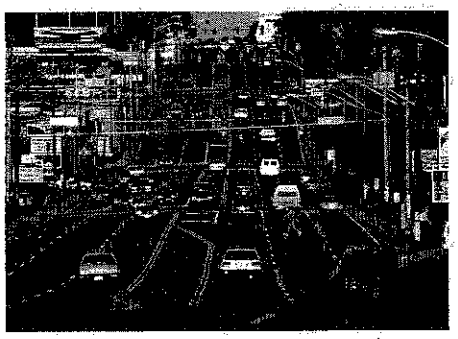
Baltimore County Complete Street Design Guidelines for Urban Areas

Introduction

Streets are the most important and used public spaces. Generally, the street configuration determines how accessible a community is for pedestrians and bicyclists as well as motorists. An interconnected street network with small block patterns provides the best access and mobility. Convenient and safe walking and bicycling facilities increase transportation options, and are an important component to creating livable and sustainable communities.

Typical suburban street design standards over the last 50 years have strongly favored automobiles over other forms of transportation, including walking and biking. By reducing road widths for local streets, increasing sidewalk widths, and requiring more inter-connectivity, the system will become safer, more efficient and convenient for the variety of users, as well as provide economic benefits in reduced costs of initial construction and maintenance, including snow removal.



An incomplete street prioritizes the movement of motor vehicles, making access by pedestrians and bicyclists difficult.

The idea of "Complete Streets" is about rebalancing the use streets within communities to serve the needs of all transportation users, including pedestrians, bicyclists, people with disabilities, and transit riders, as well as automobile users and other vehicular traffic.

The concept is simple and consistent—each time a road is built or reconstructed, make it multimodal. But each project should be designed to create road and street environments in ways that are sensitive and appropriate to their context—a complete street serving a low density residential area will look quite different from a complete street in a high density commercial urban area—but either would be efficient and safe for the users, regardless of travel mode, age or ability.

A complete street provides equitable facilities for walking, bicycling and transit, in addition to motor vehicles.

In a Complete Street approach, a spectrum of project needs and objectives are considered such as the land use context, volume of existing and planned motorized and non-motorized traffic, community character, desired motorized vehicular speed, safety, economic development, convenience of access to destinations, and on-street parking. The site and building design of the uses served by the street are also important considerations. The design of sites and buildings that prioritize motor vehicle access over other modes can discourage people from walking and bicycling safely.

I. SITE DESIGN

1. **Design the circulation network to facilitate connections between uses within the project and to the surrounding area by walking and bicycling as well as by driving.**

   a. Create an inter-connected street system with through intersections placed for convenient access to uses within the project. (See Table on Page D-5 for intersection spacing).

   b. Provide for at least one street connection to an adjoining property, not including the principal access to the project. Where future development is likely on adjoining properties, provide for future street connections in logical places.

   c. Use cul-de-sacs only when it is demonstrated that a street connection is not possible due to site conditions such as severe grade transitions or sensitive natural features. If a cul-de-sac must be used, include a landscaped center island.

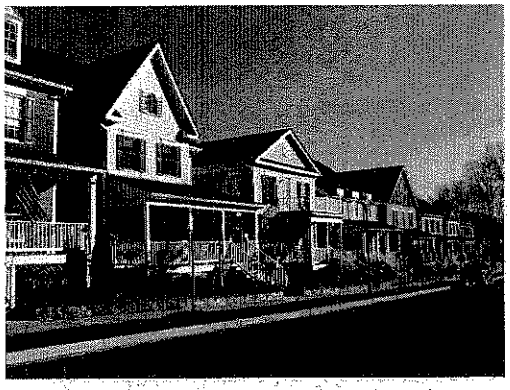
   d. Design bicycle access as part of an interconnected system linking residential areas to destinations such as schools, recreation, shopping and employment areas.

An inter-connected street and alley road system diffuses traffic through the neighborhood, and facilitates easy access by walking and bicycling.

2. **Orient the main entrances of buildings to provide direct pedestrian and bicycle access.**

   a. Place the main entrance to face the street.

   b. Use the minimum front setback width to provide the shortest distance from the entrance to the street. Avoid placing off-street parking areas between the building and the street. This will facilitate the physical and visual connection of the building to the street, creating a more comfortable, pedestrian-scaled environment.

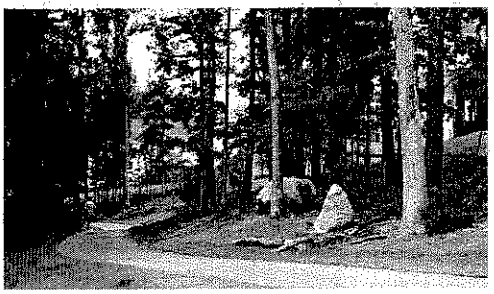


Orient the main entrances of buildings to the street, using the shortest front setback allowed.

3. **Provide pedestrian and bicycle facilities separated from the road in situations where they provide more direct, convenient, safer or attractive access.**

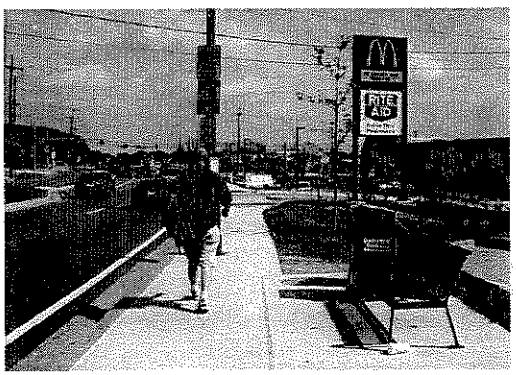
   a. Consider the use of shared use sidepaths for arterials and collector streets in lieu of on-road

On busy streets, cyclists may prefer using a sidepath instead of an onroad facility.



Create internal walking and bicycling networks to link uses to each other and provide access to open space areas.

Design exterior stairways to include ramps/ gutters for bicycles where appropriate.



Paved waiting areas with benches provide a more comfortable experience for transit users.

bicycle facilities. Use sidepaths only where there are few interruptions by driveways.

b. Provide additional sidewalks to connect buildings on the site to each other if more direct access is not provided by the sidewalks adjacent to streets.

c. Provide walking and bicycling paths to and through open space areas, as appropriate.

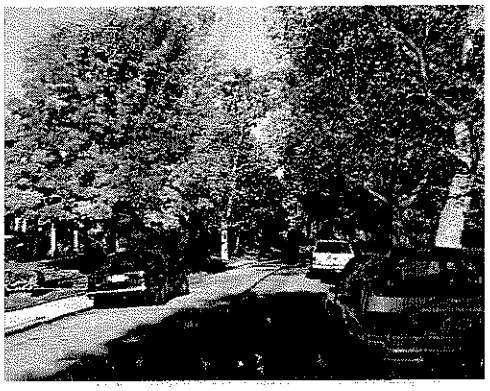
d. If the project includes exterior stairs that bicyclists will use, provide a gutter or ramp to accommodate the movement of bicycles up/down the stairway.

4. Design transit stops for the convenience and comfort of transit users when a transit stop is located (or planned to be located) on a road bordering the project site.

a. Provide direct pedestrian access from the stop to the main entrance.

b. For stops serving over 10 potential riders, provide a paved surface with benches, lighting, and trash receptacles with lids if trash removal is available. Alternatively, provide an 8'x15' pre-graded area free of obstructions and with appropriate access rights recorded to accommodate a future MTA bus shelter.

c. Incorporate bus pull-outs where appropriate into the design.



Narrow streets and on-street parking have a natural traffic calming effect.

Paving materials can be varied to define different uses as well as add visual interest.

Use curb extensions at intersections when roads include on-street parking.

II. ROAD DESIGN

1. Design streets to slow traffic and promote walkability and bikeability.

a. Following the table at right, use the narrowest road widths in conjunction with traffic management techniques to meet the needs of all users. Particularly for residential streets, most people do expect and accept the need to drive more slowly and carefully.

b. Incorporate on-street parking into the street design. In residential neighborhoods, on-street parking has a traffic calming effect, and provides a buffer between moving traffic and pedestrians. In commercial areas, on-street parking provides convenient patron access to retail uses.

2. Consider the following design options, as appropriate:

a. Type of paving materials for sidewalks: While concrete is likely to be the most cost effective, the addition of decorative paving such as brick or colored concrete may add extra visual interest in special locations. Decorative paving could also be used as a buffer area between the walk and curb. In a more naturalistic environment, asphalt material may be more appropriate. If soil conditions are suitable, consider using permeable pavement.

b. Curb extensions (bulb-outs): These are used to narrow the paved area of the street, generally at intersections or for mid-block crossings, making it easier for pedestrians to cross the street. Their use is restricted to roads with on-street parking.

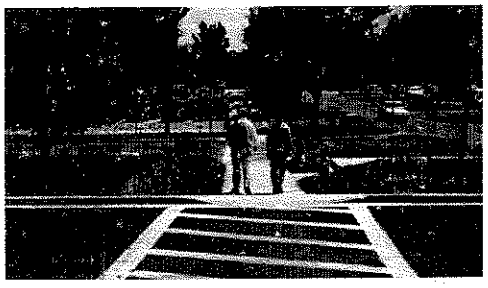
Street Design Guide

Street Type	Posted Speed Range (mph)	Volume (ADT)	Appropriate Bike Facility	Sidewalk*	Intersection Spacing (ft.)
Principal arterial	40-50	>18,000	Bike lane, cycle track or sidepath	Both sides of road, separated from curb, 6' wide	660-1,320
Minor arterial	35-45	10,000-25,000	Bike lane or sidepath	Both sides of road, separated from curb, 5' wide	300-1,320
Major collector	30-35	5,000-15,000	Bike lane or sidepath	Both sides of road, separated from curb, 5' wide	300-660
Minor or neighborhood collector	30-35	<6,000	Bike lane or shared bike/parking lane if few parked vehicles	Both sides of road, separated from curb, 5' wide	300-660
Local street, mid to high density	25	<3,000	None needed unless part of a network route	Both sides of road, separated from curb, 5' wide	200-660
Local street, low density	25	<3,000	None needed unless part of a network route	Both sides of road, separated from curb, 5' wide	200-660

*Notes:

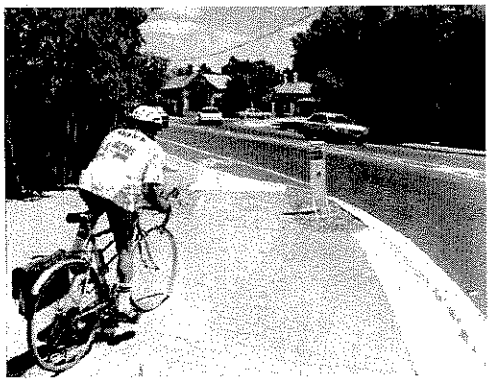
(1) While separation of the sidewalk from the curb is preferable, if the sidewalk is located directly adjacent to the curb, 8' wide is desirable for principal arterials, and 6' wide for all other street types.

(2) Wider sidewalks may be appropriate in areas of higher pedestrian activities particularly in commercial and mixed use districts.



Use medians to provide pedestrian refuges, making crossing busy roads safer.

Design bioretention facilities as attractive amenities of the pedestrian environment.



Make use of traffic signals and pavement markings to create safe and convenient pedestrian and bicycle road crossings.

c. **Medians and enhanced pedestrian refuges:** Use these on wide and/or heavily trafficked roads to make them safer and easier for pedestrians to cross. Medians are also useful for traffic calming.

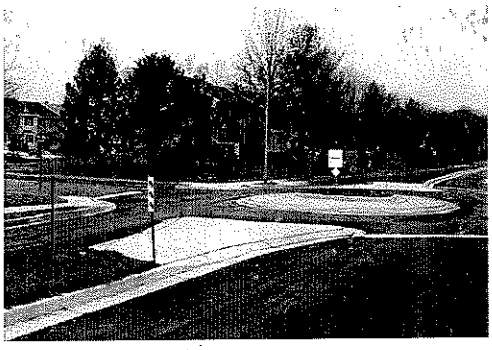
d. **Bioretention curb extensions, medians and sidewalk planters:** Bioretention includes planting strips taking runoff from the street, without having to construct a curb and gutter system, and providing stormwater infiltration and storage. Their design contribute to the attractiveness of the neighborhood.

e. **Lighting:** Adequate lighting should be provided for all pedestrian routes along streets, and in locations such as parks, commercial districts, and transit stops, where night-time use occurs. Lighting for sidewalks and shopfronts is most effectively provided by pedestrian-scale streetlights (12 to 16 feet in height) placed inside the curb, spaced about 60 feet apart, on ornamental poles. Such fixtures contribute to positive night-time environments and more successful commercial districts.

f. **Crosswalks:** Pedestrian crossings may be marked with reflective material or paint, or, in some locations, it may be desirable to use a specialized material or color. New materials are available to stamp and color markings in asphalt, which can be used to create a distinctive, richer visual appearance. Crosswalks should be present on all legs at signalized intersections, unless hazardous conditions make one or two legs unsuitable.

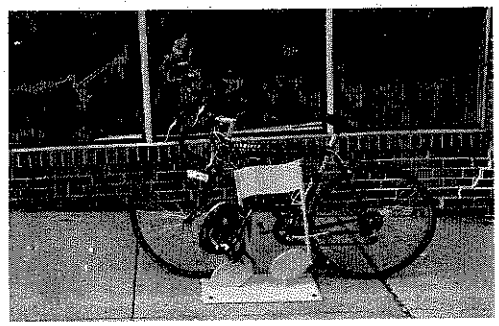
g. **Pedestrian/bicycle traffic signals and markings:** Enhanced signals, signage, and road markings (e.g., advance stop and yield lines) offer the opportunity to strengthen crosswalk safety. Traffic signal technology is evolving, and national standards have yet to be established. Incorporate the most appropriate traffic signals to be responsive to pedestrian and bicycle demands.

h. **Traffic Calming:** Design techniques that work to slow down motor vehicles can be used to make the environment safer for walkers and cyclists. Options include creating one way traffic patterns, turn restrictions, narrowing lane widths, traffic circles or roundabouts, speed humps, pedestrian refuge islands, and curb extensions. Ensure that



Incorporate traffic calming devices such as roundabouts as appropriate to reduce motor traffic speeds.

Pedestrian amenities promote walking by making the walking environment more comfortable and attractive.



Locate bicycle parking to be easily accessible, convenient and secure.

the design provides for the movement of cyclists. When introducing traffic calming techniques into an existing neighborhood, residents and stakeholders should be fully engaged in each stage of the design process.

i. **Pedestrian and bicycle street furniture and amenities**: Incorporate street trees, plantings, benches, trash receptacles, and wayfinding signage into improvement projects as appropriate, to support and encourage pedestrian and/or bicycle activity. Street trees provide shade during the summer and have a calming effect on traffic speed, making the overall environment more pleasant. Benches and trash receptacles should be placed strategically as resting, waiting and people-watching areas.

3. Provide bicycle parking facilities.

a. Provide conveniently located, easily accessible, secure bicycle storage at major commercial, institutional, governmental, multifamily residential and recreational facilities for patrons and employees. Consider the use of custom designed racks to promote the locale or adjoining business.

b. For short-term parking (less than two hours), provide easy-to-use outside bicycle racks. Locate the parking facility so that it is visible and in close proximity to primary entrances. Embed racks in cement or affix with tamper-proof bolts or screws, and provide lighting for night-time use. Consider use of security cameras and protection from bad weather.

c. Provide long-term parking (more than two hours) for employees and building tenants. Ideally, long-term parking is indoor, provides high security and offers protection from bad weather. Locate the parking facility in a well-lit, visible area. Provide enough space so that cyclists do not have to detach wheels, panniers and other gear or components; and to allow more parking to be added as more people choose to cycle. Locate for convenience so that bicyclists don't have to take bicycles through heavy doors, on stairs, or in elevators.