

Walkable Cabot



A Pedestrian Plan for Cabot, Arkansas

March, 2007

Table of Contents

Cabot Pedestrian Facilities 3

Public Involvement..... 4

Consideration in Pedestrian Planning..... 7

Plan Priorities for Walkable Cabot 9

Paying for Sidewalks 12

Techniques and Technologies to Consider..... 14

Summary of Policies/Responsibilities and Actors..... 16

Appendix

 Resolution 18

 Workshop Survey Results..... 19

 Glossary 23

 CARTS Roadway Design Standards 25

Prepared by
METROPLAN

for the
City of Cabot, Arkansas
April 2007

The preparation and publication of this document was financed in part by federal funds provided by the U.S. Department of Transportation through the Federal Highway Administration and Federal Transit Administration. The provision of federal financial assistance should not be construed as denoting federal agency approval of any plans, policies, programs or projects contained herein.

Cabot Pedestrian Facilities

Pedestrian facilities promote a sense of community, increase attractiveness and improve opportunities for equality of access and a healthy lifestyle. Sidewalks contribute to the overall vitality of downtowns, and help reduce crime in residential neighborhoods. Additionally, provision of sidewalks fulfills a valid transportation need and recreational need for walking.

For all these reasons, the City of Cabot recognizes the importance of providing walkways to its citizens. In April 1998, the City adopted a sidewalk plan map depicting phases of new sidewalk construction. Two of those phases have since been completed, see map in the appendix. In November 2005, the City Council requested that Metroplan, working with Cabot's Planning Commission and Public Works staff, update the existing map and prepare a master pedestrian plan to include all aspects of walkway facilities.

Authorization to prepare, adopt and enforce plans

The State of Arkansas allows for broad municipal planning activities. Act 186 of 1957 (as amended) establishes the foundation and authority for undertaking plans. Following is an excerpt from the legislation.

Section 1. Municipal planning cities of the first class and second class.

- a. *Power to adopt and enforce plans. Cities of the first class and second class shall have the power to adopt and enforce a plan or plans for the coordinated, just and harmonious development of the municipality and its environs.*

The plan or plans of the municipality shall be prepared in order to promote, in accordance with present and future needs, the safety, morals, order, convenience, prosperity and general welfare of the citizens: and may provide, among other things, for efficiency and economy in the process of development, for the appropriate and best use of land, for convenience of traffic and circulation of people and goods, the use and occupancy of buildings, for healthful and convenient distribution of population, for good civic design and arrangement, for adequate public utilities and facilities, and for wise and efficient expenditure of funds.

At the request of the City of Cabot, this pedestrian plan, *Walkable Cabot*, has been prepared.

Public Involvement – Walkable Cabot

On May 16, 2006, nearly 60 Cabot citizens turned out to participate in a workshop designed to elicit residents' ideas and priorities about walkway facilities in their community.

The results of the workshop were summarized in text and map, and from the summary a draft plan was prepared for the Planning Commission.

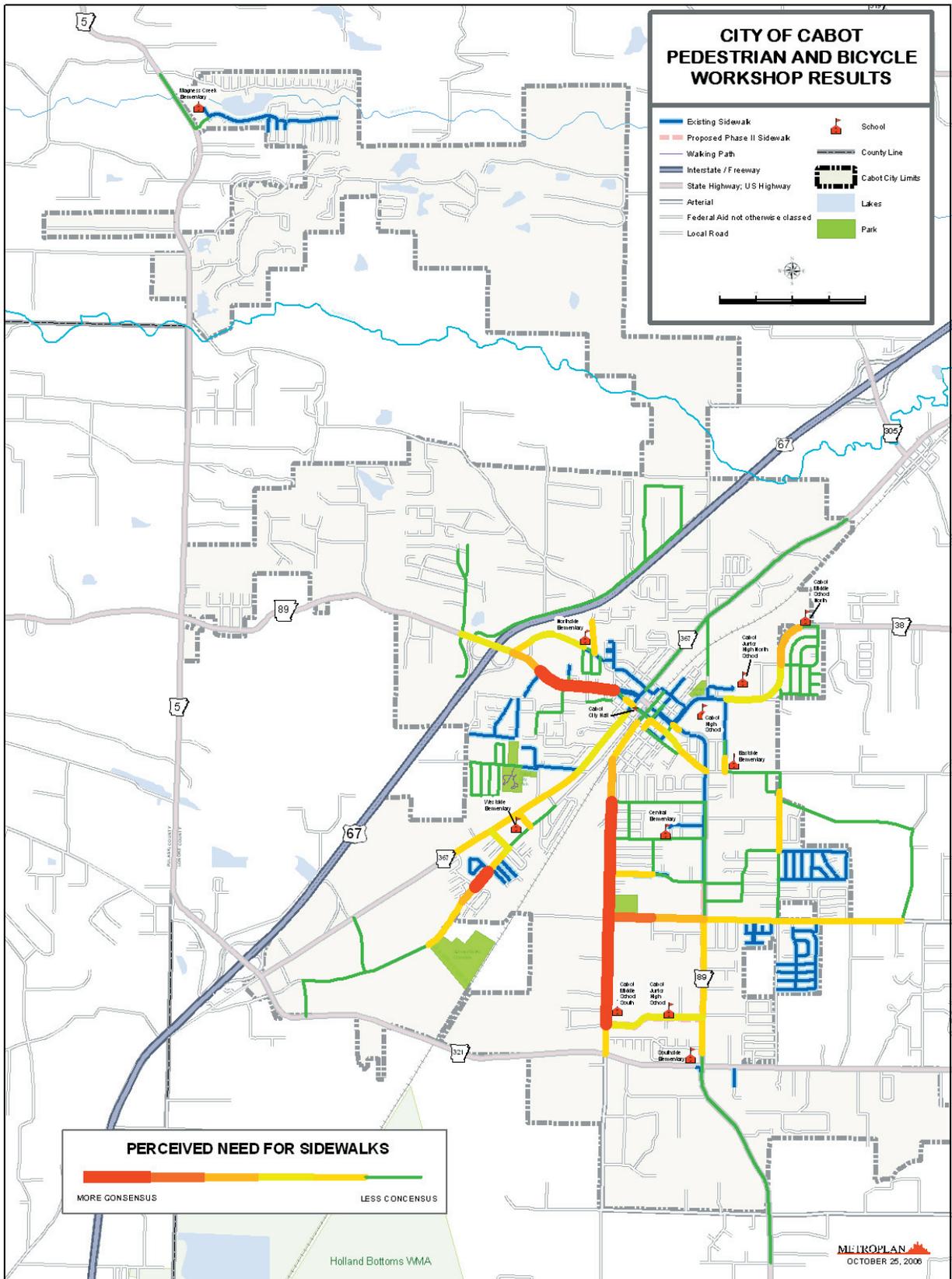


What we learned

These comments, concerns and suggestions were all expressed by Cabot citizens. The City considered each point and all have been incorporated into this pedestrian plan either as priorities, policy statements or design standards.

Workshop participants used maps to delineate areas deemed most in need of sidewalks. A composite map depicting the most frequently cited areas is found on the opposite page.

- ✓ Participants placed equal emphasis on both the quantity and quality of sidewalks and decided that:
 - Sidewalks should be constructed everywhere
 - Sidewalks should be designed to meet or exceed Americans with Disabilities Act (ADA) guidelines.
 - Sidewalks should be constructed in all new subdivisions.
- ✓ Proper maintenance of existing sidewalks, and the rebuilding of some, should also be a top priority. Some sidewalks, such as those in the downtown area, are in such disrepair as to be unusable, and should be rebuilt.
- ✓ Street and roads in need of sidewalks most often named by workshop participants were:
 - Main Street, from 5th Street to Dakota
 - Kerr Station Road, from Cardinal to Oak Meadows, and
 - S. First Street, from Versailles to Country Village Circle.
- ✓ Additional important findings of the workshop participants included:
 - Areas around schools and recreation areas should be given priority.



- When constructing sidewalks, building links which provide connectivity between existing sidewalks should be considered first.
 - Innovative technology, such as count-down pedestrian signals and oversize buttons to engage the pedestrian signal phase, as well as creative construction techniques, such as “bulb outs” and were cited as useful, especially for children.
- ✓ Provision of crosswalks and pedestrian refuges were considered important for reasons of both safety and mobility.
 - ✓ Interest was expressed in shared walking/bicycling paths and trails.
 - ✓ Interest in developing a bicycle plan was expressed both at the meeting and in subsequent e-mails to Metroplan by Cabot citizens.

The Public Weighs In – Again

On November 30, 2006, members of the public again showed up for a Walkable Cabot meeting—this time in a driving rainstorm.

Attendees were shown the draft plan and asked for their questions and suggestions for improving the final plan. (Specific questions regarding past issues or situations of immediate concern were noted and followed-up by Cabot’s city engineer, and are therefore not included in this pedestrian plan.) Based on the comments received at the meeting and in subsequent communications, several minor editorial changes were made, as well as the following major adjustments:

- ✓ A short section on funding options was added.
- ✓ The discussion of maintenance issues was expanded.
- ✓ The plan map was altered to reflect additional future pedestrian facilities:
- ✓ A pedestrian crossing over US 67/167 (exact location to be determined at a later date).
- ✓ Extend Linda/Dietrich to Mt. Carmel.
- ✓ Extend Mt. Carmel to nearby schools

Of equal importance were comments regarding the implementation of Walkable Cabot. This plan, Walkable Cabot, was produced with significant participation from Cabot’s residents, City Planning Commissioners and Public Works staff. In keeping with Cabot’s tradition of active public participation, people at the meeting expressed enthusiasm for continuing to be involved in the process of implementing the plan.



Considerations in Pedestrian Planning

Eliminating Barriers

One of the best ways to encourage walking is to eliminate the conditions that discourage people from walking.

“Safety” and “Access” are the watchwords in planning for pedestrian facilities. The characteristics and needs of pedestrians are different from all other travel modes. Recognizing the unique needs of pedestrians is the first step toward improving mobility for all pedestrians.

Safety: Several issues fall under the category of pedestrian safety. Surface condition, physical barriers (telephone poles, newsstands) and crosswalks are just a few examples of safety issues. Surface conditions do not matter to all pedestrians, but the ones to whom it does matter, it is a serious issue. It is difficult to near impossible for a person in a wheelchair to navigate a sidewalk that is broken. The same is true for someone pushing a stroller, or anyone who is unsteady on his/her feet. Physical barriers that cause problems for those people can also be hazardous to any pedestrian. Crosswalks and mid-street refuges are essential elements of a walkable community, and extra consideration should be given to their design. Crosswalks need to be not only safe and convenient, but also “obvious”. Relatively inexpensive techniques, such as changing the pavement surface with textured and tinted concrete, can create a sense of “the pedestrian belongs here”.



Access: Access is a critical issue for pedestrians. The wag who said “You can’t get there from here” can often be accepted literally when the reference is to walking. People wishing to walk from their home to the grocery store may not be able to make that choice due to a lack of connecting walkways.



Characteristics and Needs of Pedestrians

Pedestrians fall into five basic categories.

1. **Children and pre-teens:** These young pedestrians are usually impulsive and unpredictable, shorter and therefore hard to see. They rely on adult to look out for them.
2. **Teenagers:** Young people without drivers licenses or regular access to cars tend to walk longer distances, walk during night and evening hours, and walk to school.
3. **Elderly:** Seniors walk for exercise, walk because they may no longer be able or willing to drive, and walk at a slower pace than any other pedestrian.

4. “Everyday” pedestrians: Virtually everyone is a pedestrian at some point during the day. These “everyday” pedestrians are most frequently on roadways early in the morning and evening, walk or run longer distances than most pedestrians and are concentrated in downtown or commercial areas where there tends to be more traffic. Many of these pedestrians can be observed traversing parking lots in big box commercial centers.
5. Physically impaired: People with disabilities may walk because they cannot drive. Pedestrians in wheelchairs or on motorized scooters may be hard to see because they are shorter.

Pedestrians with disabilities

The Governor’s Commission on People with Disabilities reports that over 115,000 people who use wheelchairs or have some other mobility limitation live and work in central Arkansas.

People with disabilities confront obstacles that begin in the parking lot. Sensitive roadway design should include accessible parking, as well as well-maintained sidewalks with appropriate ramps and curb cuts. Designing for people with mobility limitations is really not such a big leap from designing quality, pedestrian-friendly environments for everybody. For example, intersections should include signal timing with features such as voice activation to permit safe crossing for everyone. Pedestrian refuges should be provided in high-traffic areas. When designing for people with disabilities, the entire trip should be taken into account and include consideration for accessibility at all points of travel.



Title III of the Americans with Disabilities Act, Public Accommodations, provides a minimum standard of design. Compliance with those standards will foster ease of movement. METRO 2030 goes further than the ADA “minimums” and urges an aggressive pursuit of design that expresses the highest and best aspirations of central Arkansas citizens.

The table below compares mobility/disability for the USA, Arkansas, central Arkansas, and Cabot. About 7 percent of the population in central Arkansas has a mobility limitation, defined as difficulty going outside the home alone for routine trips like shopping or visiting a doctor’s office. In Cabot, the portion is lower: a little over 4 percent, a bit under one person in twenty.

Percentage of Population Age 5 + With Go-Outside-Home Disability

| USA | Arkansas | LR-NLR MSA | Cabot |
|------|----------|------------|-------|
| 7.1% | 8.2% | 6.9% | 4.2% |

Source: Census 2000; figures represent estimate for percentage of noninstitutionalized household population.

Cabot's Senior Pedestrians

Cabot is a “young” city, with a median age in 2000 of 32.2—slightly below US and regional averages. Even so, as the city continues to grow, issues of aging population, health and infrastructure must be confronted and addressed. In twenty years, one out of every five people in central Arkansas will be 65 years or older; that fact alone will dictate a change in travel behavior. Providing for the mobility of people can positively affect the region’s health, economy and vibrancy. It is one of the ways that the fabric of society is knit together. Consistency and quality of design throughout the metro area will ensure access and inspire confidence in people regardless of age, gender or ability.



For elders, the proportion of mobility-disabled population is higher. As the table below shows, Cabot has about the same proportion of mobility-disabled elders as the national average. While Cabot’s elderly population is somewhat smaller than average, aging of the population means this population will certainly increase over the next two decades.

Percentage of Population Age 65 + With Go-Outside-Home Disability

| USA | Arkansas | LR-NLR MSA | Cabot |
|-------|----------|------------|-------|
| 20.4% | 22.9% | 22.7% | 20.7% |

Source: Census 2000.

Although loathe to give up driving altogether—an act that literally and symbolically means losing independence—given a choice, many senior citizens would prefer walking short distances to getting behind the wheel of a car.

Plan Priorities for Walkable Cabot

Participants in Walkable Cabot developed priorities for sidewalk construction. Chief among the public’s preferences was to provision of access from neighborhoods and apartment complexes to destinations throughout the City. Also high on the list of needed construction was connection to the various disparate segments of existing sidewalks in order to provide continuous walkways.

City and Metroplan staff reviewed the comments and concurred on a number of recommendations. Priorities for new construction therefore include:

- Providing access from neighborhoods to schools, recreational areas and public facilities.
- Providing access to shopping and commercial areas.
- Connecting segments of sidewalk.

The map on the following page depicts these priorities.

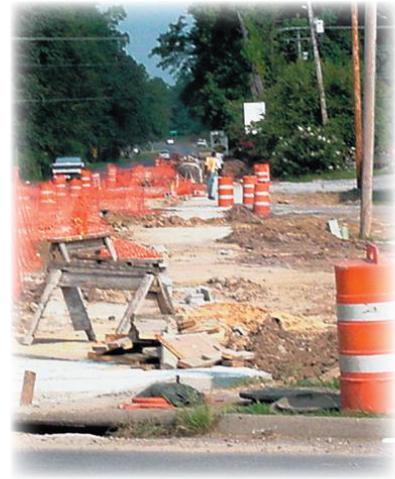
Cabot Pedestrian Facilities



Implementing Strategies

Committing to a program of consistent walkway construction and maintenance is the first and most important step in implementing a pedestrian plan. While the exact dollar amount set aside for this program may vary from year to year, depending on available resources, the City should be prepared to budget at least a specified minimum amount each year.

The following additional policy recommendations are taken directly from public input at the Walkable Cabot event and in subsequent surveys and e-mail comments.



Policy Plan Recommendations

- CARTS design standards, appended to this document, will be used in new and retro-fit sidewalk construction. CARTS standards incorporate both ADA and AASHTO standards.
- Make pedestrian walkway construction and maintenance regular budgeted line items on Cabot's Public Works annual program.
- All new residential and commercial construction will incorporate sidewalks.
- Wherever possible, sidewalks will include a four-foot grassy buffer. Where sidewalks must be built to back-of-curb, sidewalk width will be extended to six feet.
- Maintain and improve existing sidewalks. This includes repairs to the concrete and routine removal of rubbish that accumulates on walkways.
- Provide appropriate furniture to pedestrian facilities; for example, benches and trashcans.
- Provide safe and convenient pedestrian crosswalks including pedestrian refuges in appropriate areas.
- Make use of innovative pedestrian technology for construction, signing and regulating crosswalks and other facilities.

Other Considerations

Specific roadways—Kerr Station Road, Main Street and South First Street—were named by workshop participants as “must haves” for sidewalks. All three roadways are in need of reconstruction, all are surrounded by land that has undergone fairly rapid residential and commercial development, and all now experience high vehicular traffic volumes. At the City's request, a city-wide traffic study was conducted by Metroplan, The recently completed study recommends major reconstruction and minor widening on Kerr Station Road, Main Street and South First Street. Construction of sidewalks along these roadways before other improvements are made must consider the future cross-section

to ensure that sidewalks do not interfere with future widening, or require reconstruction when the roadway is widened or curb-and-gutter is added. Acquiring all right-of-way for roadway reconstruction first, before building sidewalks, should address this issue.

Two additional recommendations came out of the public’s participation in Walkable Cabot. Within the next five-year planning period, the City of Cabot should undertake the preparation of a:

- (1) shared path/walking trail plan; and,
- (2) bikeway plan.

Strategies That Enhance Pedestrian Use

| Engineering/Planning | Education | Enforcement | Encouragement |
|--|--|---|---|
| Build sidewalks where people want to go | Walking & health (Center for Disease Control & Prevention) | Keep motor vehicles & bikes off the sidewalks (except shared paths) | Organize community walks (e.g., through Parks & Recreation Departments) |
| Employ traffic calming techniques where appropriate* | Coordinate with schools for National SAFE Kids Campaign | Control speeding & unsafe vehicle movements at intersections | Enlist business to support employee walking programs |
| Provide street furniture, i.e., benches, trash receptacles, drinking fountains, etc. | Pedestrian Road Show | Enforce jaywalking laws. Consider passing a “poop Scoop” law | Provide aesthetic enhancements such as trees, landscaping, textured sidewalks |

*“Traffic calming” is an integrated approach to transportation planning, which seeks to maximize mobility while creating a more livable community by reducing the undesirable side effects of mobility “bulbouts”, neck-downs and changes in roadway/walkway surface are only a few examples of traffic calming techniques.

Paying for Sidewalks

Sidewalks, like all public infrastructure, are not cheap to build or maintain. In 2000, the estimated cost to add or replace one mile of sidewalk, assuming four wheelchair ramps, with five-foot width and existing right-of-way, was about \$165,000. Of course, that figure can vary wildly according to topographical and other conditions.

Federal and State funding opportunities

Transportation Funds — Most federal-aid programs are for construction activities on the federal-aid highway system. However, non-construction projects are eligible for funding under some programs such as the STP or CMAQ. Bridge, Hazard Elimination, and emergency relief funds may be available for use on local or minor collector roads.

Most federal-aid programs require matching funds from state or local government. This is typically an 80/20 percent federal/local split, except for specific conditions or programs such as the Safe Routes to Schools Program, which offers 100% funding.

Other Federal and State Funds — The Community Development Block Grant (CDBG) program is administered by the US Department of Housing and Urban Development to assist low- and moderate-income neighborhoods. Residents of eligible neighborhoods work closely with city staff to develop a plan for awarded funds. A neighborhood can choose to spend CDBG money on sidewalk installation and repair.

Departments within the State of Arkansas often provide grant money for pedestrian facilities. Arkansas Department of Parks and Tourism, and the Arkansas Department of Health are two such examples. Grant programs, administering agencies, funding amounts and match requirements vary greatly from year to year, but are well worth investigating.

Local Level funding sources

General Funds — One of the local revenue sources of cities and counties available for use on pedestrian improvements is the general fund resulting from sales taxes, property taxes and other miscellaneous taxes and fees

Special Tax — For high-ticket items—a pedestrian crossover on 67/167 is an example—the City may want to consider proposing a special sales tax to pay for the cost. The advantage of a dedicated tax is that it would not take away from other services, and the citizens of Cabot would determine their priorities through referendum.

Private Developers — The majority of local streets and sidewalks are paid for at the time of development by the developer, who includes the cost in the sales price of the homes or properties. This also applies to the provision of pedestrian facilities. (The City of Cabot is then responsible for maintaining improvements within the public rights-of-way.)

Local Attributed Surface Transportation Program Funds (LUZA) — The Central Arkansas Regional Transportation Study (CARTS) receives annual suballocated federal transportation dollars, currently between \$6 and \$7 million. Also called “attributed” or “dedicated”, these suballocated funds are made available to the Little Rock-North Little Rock urbanized area by the US Department of Transportation and extended to the entire CARTS planning area by the Metroplan Board of Directors. As a member of Metroplan and CARTS signatory, the City of Cabot receives slightly more than \$50,000 a year.

The City may use these locally attributed dollars—LUZA—on any eligible transportation project, including pedestrian facilities. As with other transportation funds, a 20 percent match is required.

Maintenance — In both the workshop and meeting, maintenance emerged as an important issue with the public—and with good reason. Poorly maintained walkways can quickly render them unusable and thus negate public investment.

Generally, the City is responsible for maintaining sidewalks that are constructed in the right-of-way. Possible exceptions might include neighborhoods with a property owners association that stipulates resident responsibility.

Techniques and Technologies to Consider

A variety of innovations in design and technology are making pedestrian mobility safer, more convenient and aesthetically more pleasing. Here is one example: some cities are experimenting with rubber sidewalks—a very new technology that recycles a product to create sidewalks that resist cracking and breaking, do not harm tree roots and provide a softer surface for footfall. Now, this is a very new technology, and its effectiveness will have to be carefully evaluated before we see it in general use. But it shows how even simple sidewalk construction is changing.

Here is a small sampling of innovations and techniques the City may consider when designing and building pedestrian facilities.

Crosswalks

Raised Table. There are many variations on this concept, and at a range of costs. Some tables are designed with weight-activated lights; others feature solar or low-voltage lights with automatic timers. The essential elements of the raised table, however, are simple: a slightly raised, wide walkway, usually built with textured, tinted concrete, that provides a visual signal to both vehicle driver and pedestrian that “this is a place where people are likely to be walking”. Raised tables are preferred at mid-block or intersection on streets next to schools, buildings such as libraries and community centers—wherever there are likely to be a high volume of walkers.

The Power of Paint. Even the high-grade reflective paint is inexpensive enough to use lavishly. As with other techniques, paint sends a visual signal to walkers and drivers alike.

Truncated Domes. AASHTO recommends use of this product, which goes down on pavement much like a mat, instead of grooved lines at intersections.

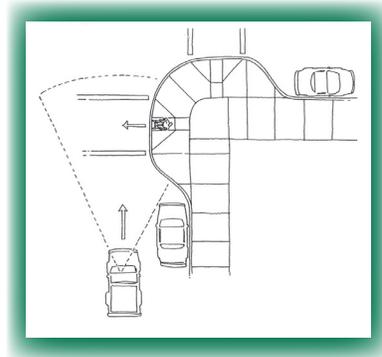
Streets

Access Management. Costly improvements are not always the solution to safety and congestion problems. Roads, like other resources, need to be carefully managed. Access management strategies can extend the life of the roadway and increase both mobility and safety for pedestrian and driver alike.



Enlarged for detail

Bulb-outs, neck-ins, etc. These terms refer to various traffic calming techniques designed to slow down traffic in strategic areas (for example, at some school intersections or in a busy shopping area) and provide those visual cues that pedestrians are about.



Miscellaneous

Big Button. This is such a simple innovation, but so functional that one wonders why it wasn't designed that way from the very beginning. Its size allows hands of every size and ability to push the button



Street Furniture. This is catch-all term to describe the benches, trash cans, art and other outdoor features that may be added to the streetscape. Although these items can greatly enhance the aesthetics and mobility within a community, street furniture is not an inexpensive consideration. To have the most impact, the City should consider creating pedestrian "nodes" and investing judiciously in appropriate street furniture.

Constructing and maintaining "walkable" sidewalks

Often, it is the "small" errors and omissions in walkway construction and maintenance that frustrate pedestrians. The good news is that these small items are also usually very easy and inexpensive to fix. Here are some examples:

- A Objects that overhang circulation paths do not provide clear headroom.

This walkway is nearly perfect: five-foot sidewalk width, comfortable grassy buffer and shade-producing trees. But lovely as it is, the tree canopy is so low that people must bend over to avoid getting smacked by the branches. Sensible pruning would remove the obstacle and still leave the trees.



A



B



C

B & C Objects intrude onto walkway.

Objects can be temporary, such as in photo B, and therefore an enforcement issue. Or, they can be more egregious, as in photo C.

This type of obstacle indicates that no one really considered people actually using it when the sidewalk was built.

Summary of Policies/Responsibilities and Actors

| Policy | Public Works | Planning Commission | City Council | Other |
|--|--------------|--|-----------------------------|---------------------------|
| Build sidewalks to CARTS design standards. | X | Through administration of subdivision regulations. | | Developers |
| Budget sidewalk maintenance & construction. | X | | X | Public input. |
| Sidewalks in all new residential & commercial development. | X | X | X | Developers. |
| Provide regular sidewalk maintenance/repair. | X | | As part of budget approval. | Enforcement where needed. |
| Street furniture | X | X | X | |
| Crosswalks & refuges | X | | | |
| Try innovative technology and techniques. | X | X | X | |
| Develop bicycle & trails plan. | X | X | X | Public input. |

Appendix

Resolution

Workshop Survey Results

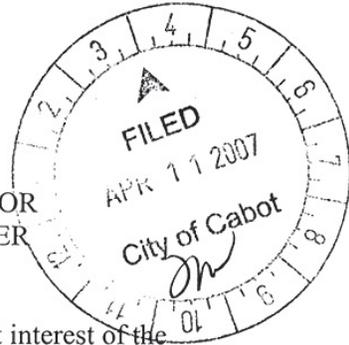
Glossary

CARTS Roadway Design Standards

Resolution

RESOLUTION NO. 24 OF 2007

A RESOLUTION ADOPTING WALKABLE CABOT FOR THE CITY OF CABOT, ARKANSAS; AND FOR OTHER PURPOSES



WHEREAS, the City Council has determined that it is in the best interest of the citizens of Cabot for the City to adopt "Walkable Cabot"; and

WHEREAS, the adoption of "Walkable Cabot" is to facilitate a pedestrian plan within the City of Cabot, Arkansas.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CABOT, ARKANSAS:

SECTION 1: That there is hereby adopted by the City of Cabot, Arkansas "Walkable Cabot", as recommended by the Planning Commission.

SECTION 2: Three (3) copies of "Walkable Cabot" have been and are now on file in the Office of the Clerk and/or Public Works Building of the City of Cabot, Arkansas for review.

SECTION 3: This resolution shall be in force and effect from and after the date of its passage.

SPONSOR:
Referred by the Cabot Planning
Commission
Passed: April 3, 2006
Vote: 5-0-1 (Abstain)

PASSED: 7-0
DATE: 4-16-07
APPROVED:



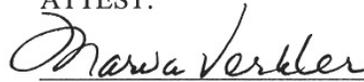
Mayor Eddie Joe Williams

APPROVED AS TO FORM:



Jim Taylor, City Attorney

ATTEST:



Marva Verkler, City Clerk

Walkable Cabot Survey Results

Participants in the workshop were asked to complete a short survey. By no means a statistical representation, the questions were designed primarily to get people thinking about why they were there. The answers to the questions also provided anecdotal information to City and Metroplan staff.

The City of Cabot may want to consider adapting this survey to be administered as a statistical random sample.

Following are the results of the survey. A total of forty-two surveys were completed and returned. Not all people answered all questions.

The question totals and comments are in ***bold italic*** type.

Walkable Cabot

Thank you for participating in this workshop. Your ideas will affect the look and shape of Cabot for years to come. Please take a few minutes to complete this. We will collect this form before the meeting starts.

I choose to live in Cabot because: (Check all the apply.)

- 22 Family-oriented
- 28 Good schools
- 27 Nice neighborhoods
- 22 Friendly, “small town” feel
- 16 It is close to the facilities or services I need

Other: ***Long family history here***

Too big now

It's home

Family lives here

To be close to my son

Wonderful cooperation among city officials/staff

Where do your children or grandchildren play? (Check all that apply.)

- 7 Neighborhood playground
- 11 School yards
- 21 Our own or a neighbor's yard
- 5 Other: ***Pay-to-play facility***
- 6 ***ballparks cited most often***

Do you drive your children to play centers, or do you and they walk?

- 16 Drive only
- 2 Walk only
- 8 Both
- Neither

How do you children get to school?

- 15 Drive only
- 2 Walk only
- 3 School bus
- 6 Combination

I don't have children - ***A number of respondents indicated that they do not have children***



How far do you live from your children's school(s)?

- 8** 1/2 mile or less
- 12** 1-3 miles
- 5** 4 miles or more

Do you have ready access to a car (whether you drive or someone else drives)?

Of the forty people answering this question, most indicated they always have access to a car -- although four people noted that they don't know how long that situation will last.

- 33** Always
- 4** Sometimes
- 3** Rarely/Never

How long have you lived in Cabot?

- 12** 1-5 years
- 7** 6-10 years
- 13** Over 10 years
- 6** Over 20 years

What do you consider Cabot's biggest asset?

Not surprisingly, the number one asset cited by workshop participants was Cabot's schools. Close behind schools was Cabot's friendly people and small-town atmosphere, although some people added that they worried about retaining that feel.

- 19** Schools/education
- 10** Friendly people/small town atmosphere "Cabot is my Mayberry!"
- 1** Fire department
- 1** Senior citizen housing is very nice
- 1** Growth
- 1** Low crime
- 1** Mild four seasons
- 1** Churches

What do you feel is Cabot's biggest challenge to overcome?

Mobility issues were considered Cabot's biggest challenge to overcome. Traffic congestion, lack of sidewalks and bicycle paths and the seamless integration of all travel modes were specifically cited by workshop participants.

- 13** Growth and infrastructure challenges
- 18** Traffic problems
- 14** Sidewalks
- 8** Bikeways
- 7** All mobility
- 1** Health issues
- 2** Not enough jobs/attracting business



Please share how you learned of this meeting.

Metroplan always asks this question. Responses teach us how to best reach people and where to put limited advertising resources. Typical of Cabot, the number one way of learning about Walkable Cabot was by word of mouth. This reinforces Cabot's image as a friendly, small town. Thirteen respondents read about the workshop in the local newspapers. Only three respondents said they were informed of the workshop through a poster or direct mail.

- 3** Direct mail
- 13** Newspaper article or ad
- 3** Poster
- 5** Picked up a flyer at: City Hall or City Annex
- 16** Friend or neighbor
- Other
 - 1** *Cabot Medical Clinic*
 - 1** *Cabot High School*
 - 2** *Senior Citizen Center*
 - 1** *Employed by the City*

Yes! Keep me posted on this projects! Here's how to reach me:

____ Name _____
Mailing address _____
Phone _____
E-mail _____

____ No, thanks. I know where to find you.

Please turn this in to workshop staff as soon as you finish!

Glossary

Following are the acronyms and terms used in this report.

AASHTO — American Association of State Highway & Transportation Officials. Design standards promulgated by this organization form the base for state and CARTS standards.

ADA — American with Disabilities Act of 1990. This is a broad act directed toward eliminated discrimination against persons with disabilities. Titles II and III address accessibility with respect to transportation vehicles, systems and facilities.

CARTS — Central Arkansas Regional Transportation Study. CARTS is the cooperative effort by participating communities, transportation providers and many other interested parties to develop a long-range transportation plan for the metropolitan area. The City of Cabot is a participating member of CARTS.

CARTS Design Standards — These are the accepted standards for roadway, bikeway and sidewalk and trail design adopted by the MPO and the City of Cabot.

MPO — Metropolitan Planning Organization. Every area with a population over 50,000 has one—in central Arkansas, the MPO is Metroplan.

MSA — Metropolitan Statistical Area. This refers to an urbanized area with a minimum population of at least 50,000. The City of Cabot is included in the Little Rock - North Little Rock MSA.

Shared Path — Separated from the roadway, shared paths are typically 12 to 14 feet and built to standards that accommodate walkers, runners, bicyclists and sometimes (depending on design and intent) horseback riders or skaters.

Traffic Calming — This refers to an integrated approach to transportation planning, which seeks to maximize mobility while creating a more livable community by reducing the undesirable side effects of vehicular mobility. See page 10 for information.

Walkability — Word coined by the federal government to describe the quality of walking conditions, including safety, comfort, convenience and aesthetics. For more information, check out this websites:

www.walkinginfo.org

www.saferoutesinfo.org

www.bikefed.org

www.fhwa.dot.gov/environment/bikeped/index.htm

www.americawalks.org

www.nhtsa.dot.gov/people/injury/pedbimot/ped

Funding Sources — The following acronyms refer to funding programs. See pages 10-11 for additional information.

CDBG — Community Development Block Grant

CMAQ — Congestion Management/Air Quality

LUZA — Locally funded Attributed STP

RUZA — Regionally significant projects are funded through the Regional Attributed STP

STP — Surface Transportation Program. “Attributed” STP moneys are suballocated to metropolitan area. Metroplan, the MPO, further suballocates these moneys into Local funds and Regional funds (LUZA and RUZA).

Central Arkansas Regional Transportation Study Area ROADWAY DESIGN STANDARDS And Implementation Procedures

These standards have been prepared for the use of all jurisdictions to incorporate into their locally adopted plans (e.g. Master Street Plan, Subdivision Regulations,) in accordance with the CARTS agreement. The standards are established to ensure regional continuity and protect the development of the transportation system. The purpose of these standards is to serve as implementing policies for the metropolitan long-range transportation plan.

The Roadway Design Standards consist of three parts. Part I is the Roadway Cross-Section Standards that define minimum cross-section requirements for various classifications of roadways, pedestrian ways and bikeways. Part II is the Access Management Recommendations consisting of minimum access management standards recommended to local jurisdictions for incorporation into local plans specifically for roadways on the Regional Arterial Network. Part III is the Project Review Process that defines the procedures by which project designs are reviewed to ensure consistency with this policy.

Overriding Policy

The following overriding policies apply to all parts of this policy document:

Policy on Freeways and Expressways

The Metroplan Board has adopted the following policy with regard to Freeways and Expressways in the CARTS area:

The metropolitan freeway system should be built to six through lanes. It is the Metroplan Board's intent that demand over that capacity be met with a robust regional arterial network and public transit.

If the Arkansas State Highway and Transportation Department sees the need to widen metropolitan freeways beyond six through lanes, it should consult with the Metroplan Board for its concurrence. Prior to planning for widening beyond six through lanes, the Department is expected to do a thorough analysis of alternative methods of meeting travel demand in the corridor with improved arterials and public transit. A thorough analysis of the impact of the induced traffic demand on local roadways as a result of the widening beyond six through lanes would also be required. The Metroplan Board may also consider conducting an independent analysis of widening proposals over six through lanes for its use and benefit.

Definition of Median

The term "median" as used in this policy shall be consistent with the definition in the AASHTO Green Book cited below:

“A median is the portion of a highway separating directions of the traveled way. ...Medians may be depressed, raised or flush with the traveled way surface.”¹

In this policy document, types of medians are divided into *traversable or flush medians*, which include painted medians and two way left turn lanes, and *non-traversable medians* which include raised, depressed or other concrete barrier medians.

Policy on Design of State Highways on the Regional Arterial Network

As part of the METRO 2030 Plan, the Metroplan Board adopted this policy on the design of state highways on the Regional Arterial Network.

A RAN corridor should always consider and balance its obvious purposes, which are not only to safely move traffic but also to enhance and support economic development. Metroplan encourages the design of the RAN network to carry large volumes of traffic for reasonably long distances within the region. The corridors are expected to support relatively dense mixed-use development supportive of public transit options. While the AHTD will determine the precise design of the RAN roadways on the state highway system, Metroplan acknowledges the need to jointly collaborate between local jurisdictions, CATA, Metroplan and AHTD to provide the most efficient and desirable RAN network that will serve the central Arkansas area.

Costs for Local Standards on State Highways beyond AHTD Standards

On state highways it is AHTD policy that the cost for any local standards which are beyond AHTD standards is the responsibility of others.

Local Elected Officials Role in Median Selection

For Roadways on the Regional Arterial Network and below, not on the state highway system, where medians are recommended, the local elected officials in whose jurisdiction(s) the roadway is located shall determine if the median is to be traversable or non-traversable. For such roads on the state highway system, the highway department shall determine the type of median in consultation with the local elected officials in the jurisdiction(s) in which the roadway is located.

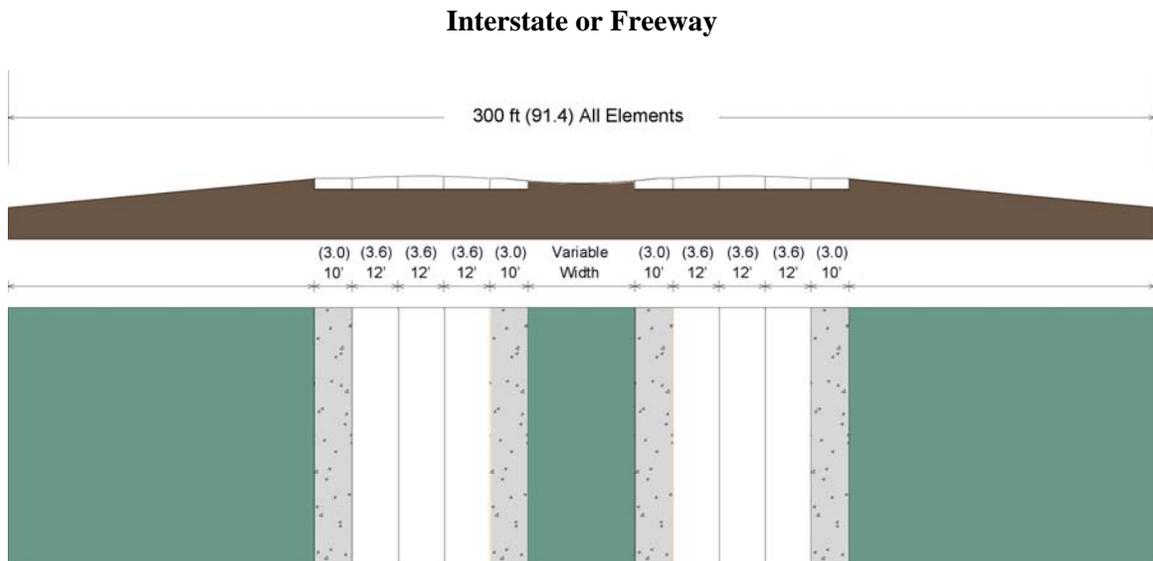
¹ A *Policy of Geometric Design of Highways and Streets*, Edition 2001; Chapter 4, Page 341, AASHTO

PART I Roadway Cross-Section Standards

CLASS I Interstates and Other Freeways are divided, fully access-controlled facilities, which are designed for long distance, through trips.

1. Required Elements:

- **Right of Way** must be adequate to accommodate 6 main lanes; a generalized width of 300 feet may be used for planning purposes and may vary depending on terrain.
- **Maximum lane width** is 12 ft. (3.6 m.).
- **A non-traversable median** (e.g. raised, depressed, concrete barrier) is required.
- **Shoulders**
 - **Inside shoulders** must be a minimum of 6 ft. (1.8 m) wide on a 4-lane section and 10 ft. (3.0m) wide for a standard 6-lane cross-section.
 - **Outside shoulders** will be a minimum of 10ft. (3.0 m) for either section.



2. Optional Elements:

- none

3. Preferred Elements:

- Landscaping of medians and buffers

4. Prohibited Elements:

- none

CLASS II Expressways are divided, partially controlled facilities with access available at minor arterials or higher functionally classified roadways. Design features include signalization at intersections where warranted and no direct access from adjoining land uses.

1. Required Elements:

- **Right of Way** must be adequate to accommodate 6 main lanes; a generalized width of 200 feet may be used for planning purposes and may vary depending on terrain.
- **Maximum lane width** is 12 ft. (3.6 m.).
- **A non-traversable median** (e.g. raised, depressed, concrete barrier) is required.
- **Shoulders**
 - **Inside shoulders** must be a minimum of 6 ft. (1.8 m) wide on a 4-lane section and 8 ft. (2.4 m) wide for a standard 6-lane cross-section.
 - **Outside shoulders** will be a minimum of 8 ft. (2.4 m) for either section.

2. Optional Elements:

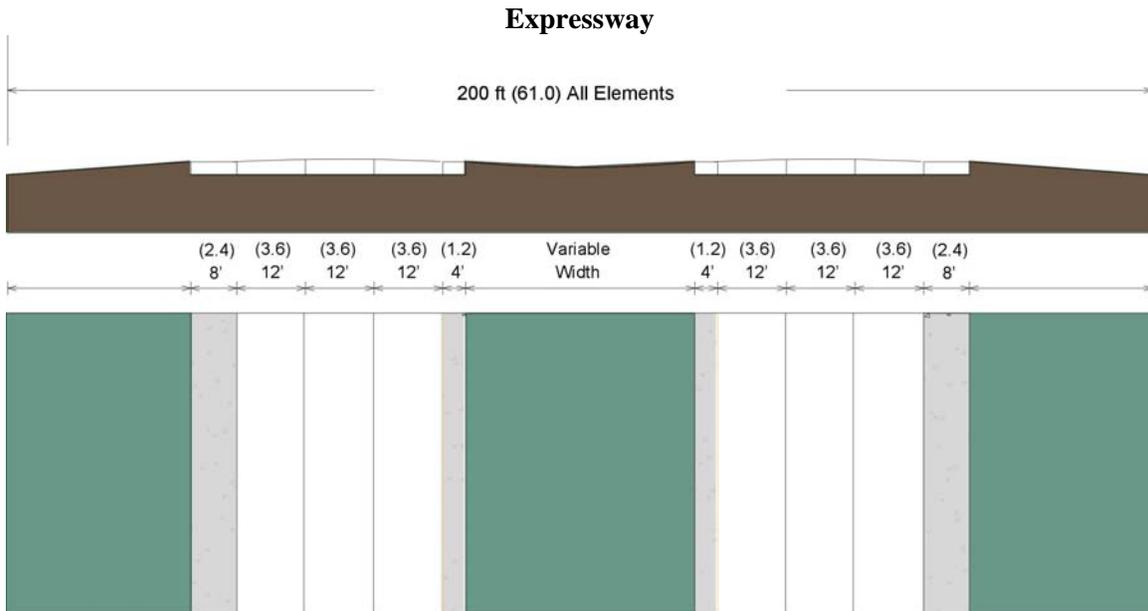
- Where median widths are 40 ft. (12.2 m.) or greater, turn-arounds should be provided at median breaks.

3. Preferred Elements:

- Landscaping of medians and buffers.

4. Prohibited Elements:

- none

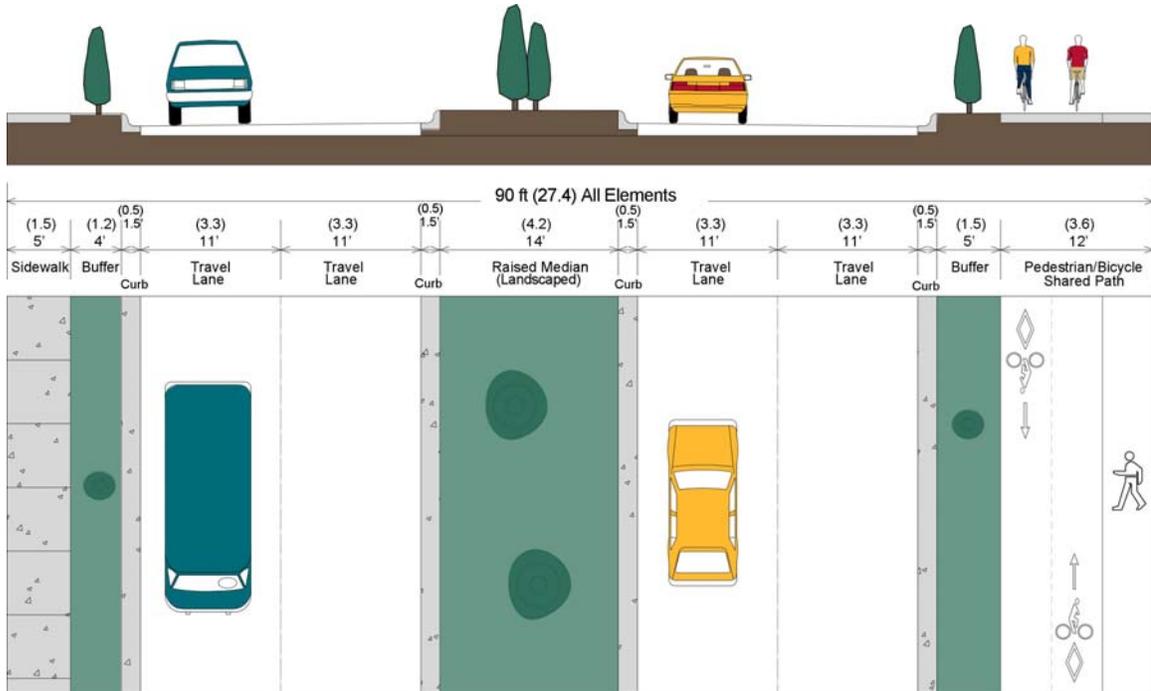


CLASS III Principal Arterials provide for long distance travel between major activity districts, and should be designed for slightly higher speeds as compared to minor arterials. They are to serve through-traffic and to connect major traffic generators or activity centers.

1. Required Elements:

- **All required design elements** must be included in the cross-section and located on publicly owned R.O.W. Sidewalks or bikeways may be located on permanent dedicated easements.
- **Right of Way** must accommodate 4 main lanes unless the 20-year forecast requires 6 lanes. But ROW for 6 lanes may be acquired for justified conditions. There is a maximum of 3 through lanes in each direction.
- **Curb and gutter** is required except in cases where terrain and/or forecast land use densities are compatible with an open shoulder design typically used in rural or exurban areas. The gutter width is not to be included in the travel lane.
- **Pedestrian friendly design is required**, including:
 - a. **Sidewalks** are required on both sides of the roadway. Minimum sidewalk width is 5 ft. (1.5 m.) and must be compatible with the Americans with Disabilities Act. *On state highways, AHTD policy is that sidewalks will be constructed on both sides of curb and gutter facilities through developed areas. In undeveloped areas, sidewalks will be considered on one side of the roadway unless evidence of pedestrian traffic warrants sidewalks on both sides of the roadway.*
 - b. **A buffer** is required between the back of curb and the sidewalk that is a minimum of 4 ft. (1.2 m.). However, no buffers are required in Central Business Districts. On state highways, AHTD policy is a 3 feet buffer with no obstructions allowed in the sidewalk and with vertical clearance of 80 inches for any overhanging object.
 - c. **Safe pedestrian crossing provisions** are required to be demonstrated by the proposing jurisdiction or agency where more than 50 ft. (15.2 m.) of pavement (including the gutter) have to be crossed by a pedestrian where pedestrian crossing is anticipated based on land use. For design options and recommendations see the Pedestrian Facilities section of these standards.
- If on a **planned bikeway route**, the bicycle element must be included and must adhere to the bicycle design standards as specified herein.
- **Maximum lane width** is 11 ft. minimum (3.3 m.) for main travel lanes or 12 ft. maximum (3.6 m) lanes where the design speed and traffic mix warrant.
- **Medians**, either non-traversable or traversable, are required on 4 or 6 lane cross sections of roadways on the Regional Arterial Network (RAN).
 - Non-traversable medians are preferred for new roadway locations on the RAN. On existing roadways either non-traversable or traversable medians may be used based on corridor conditions.
 - Where traversable medians are used as continuous center turn lanes on RAN routes, an access management plan is required to regulate driveway location, spacing and design based on local master street plan standards. Where local master street plans do not address access management, the recommended standards in Part II of this policy should be considered by the project sponsor.
 - Allowed exception: 2-lane undivided, if first phase of planned 4-lane or 6-lane principal arterial

Principal Arterial
Preferred



2. Optional Elements:

- 8 ft. minimum (2.4 m.) paved shoulder on first phase of a planned 4-lane or 6-lane principal arterial, with or without curb and gutters

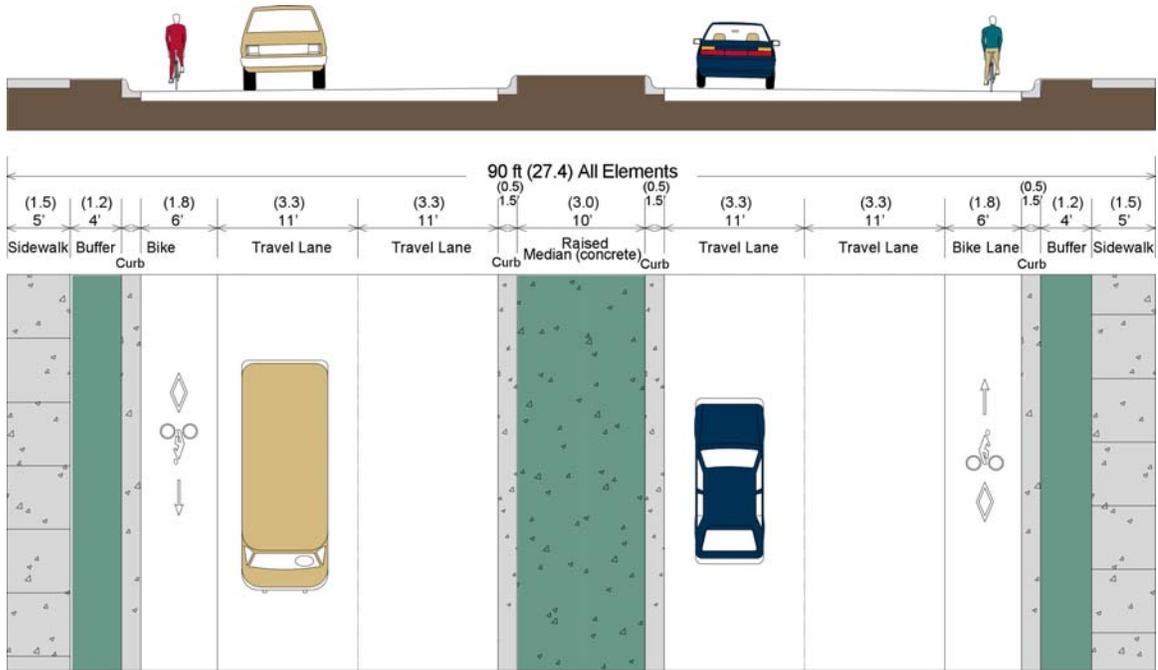
3. Preferred Elements:

- Landscaping of medians and buffers.
- If on a planned bikeway route, a Class I Shared Path is preferred.
- A non-traversable median is preferred (i.e. raised or depressed) for major retrofits and on new location.

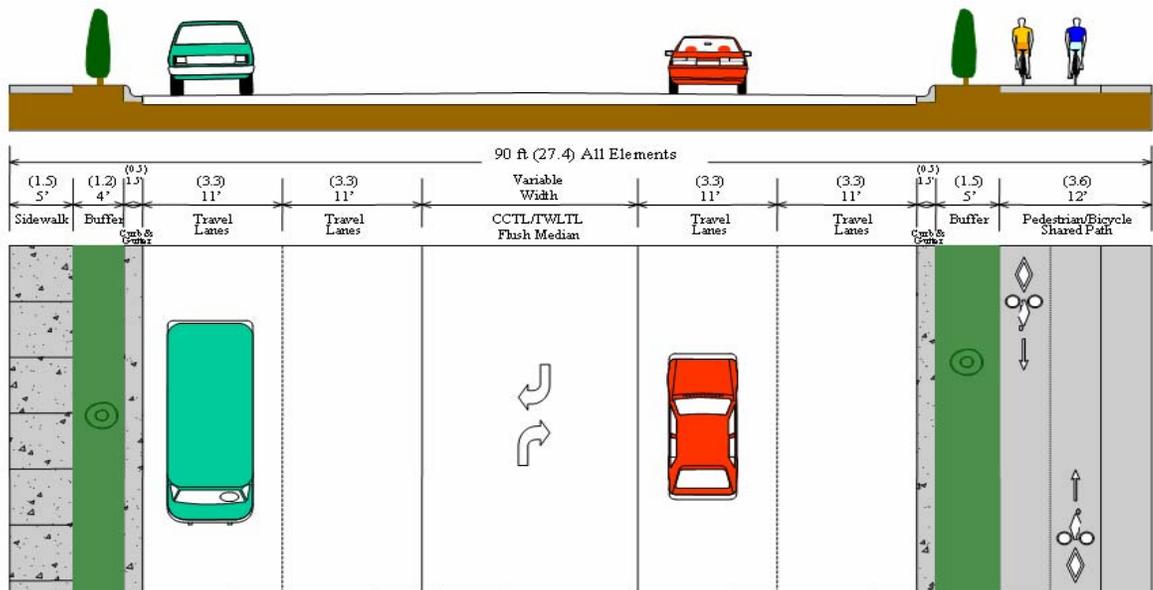
4. Prohibited Elements:

- Parking on one or both sides.

Principal Arterial Acceptable



Principal Arterial: An Example On Designated Bike Route (Class I/II) New Roadway Location - Not in CBD



CLASS IV Minor Arterials provide network connections within and through the urbanized area. These facilities typically provide a greater amount of access to adjoining land as compared to principal arterials.

1. Required Elements:

- **All required design elements** must be included in the cross-section and located on publicly owned R.O.W. Sidewalks or bikeways may be located on permanent dedicated easements.
- **Right of Way** must accommodate 4 main lanes. There is a maximum of 2 through lanes in each direction.
- **Curb and gutter** is required except in cases where terrain and/or forecast land use densities are compatible with an open shoulder design typically used in rural or exurban areas. The gutter width is not to be included in the travel lane.
- **Pedestrian friendly design is required**, including:
 - a. **Sidewalks** are required on both sides of the roadway. Minimum sidewalk width is 5 ft. (1.5 m.) and must be compatible with the Americans with Disabilities Act. *On state highways, AHTD policy is that sidewalks will be constructed on both sides of curb and gutter facilities through developed areas. In undeveloped areas, sidewalks will be considered on one side of the roadway unless evidence of pedestrian traffic warrants sidewalks on both sides of the roadway.*
 - b. **A buffer** is required between the back of curb and the sidewalk that is a minimum of 4 ft. (1.2 m.). However, no buffers are required in Central Business Districts. On state highways, AHTD policy is a 3 feet buffer with no obstructions allowed in the sidewalk and with vertical clearance of 80 inches for any overhanging object
 - c. **Safe pedestrian crossing provisions** are required to be demonstrated by the proposing jurisdiction or agency where more than 50 ft. (15.2 m.) of pavement (including the gutter) have to be crossed by a pedestrian where pedestrian crossing is anticipated based on land use. For design options and recommendations see the Pedestrian Facilities section of these standards.
- If on a **planned bikeway route**, the bicycle element must be included and must adhere to the bicycle design standards as specified herein.
- **Maximum lane width** is 11 ft. minimum (3.3 m.) for main travel lanes or 12 ft. maximum (3.6 m) lanes where the design speed and traffic mix warrant.

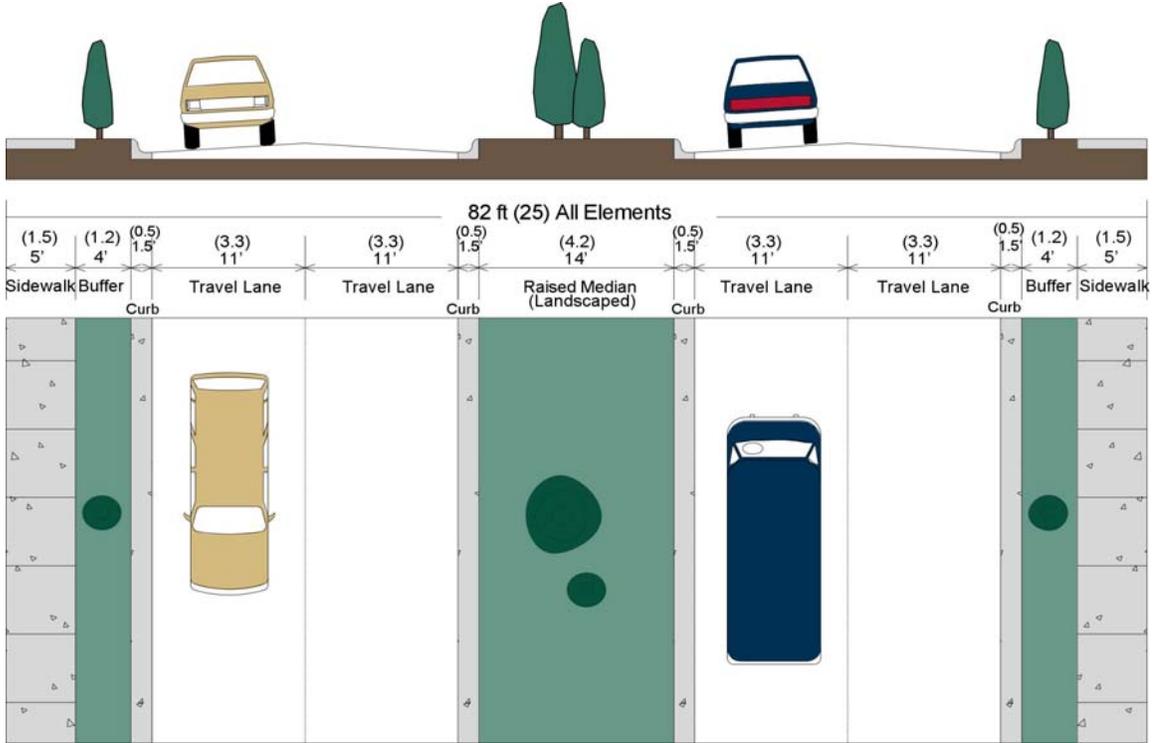
2. Optional Elements:

- b. 8 ft. minimum (2.4 m.) paved shoulder maybe used on the first phase of a planned 4-lane or 6-lane principal arterial, with or without curb and gutters.
- c. 8 ft. minimum (including gutter) parallel parking may be installed on one or both sides.

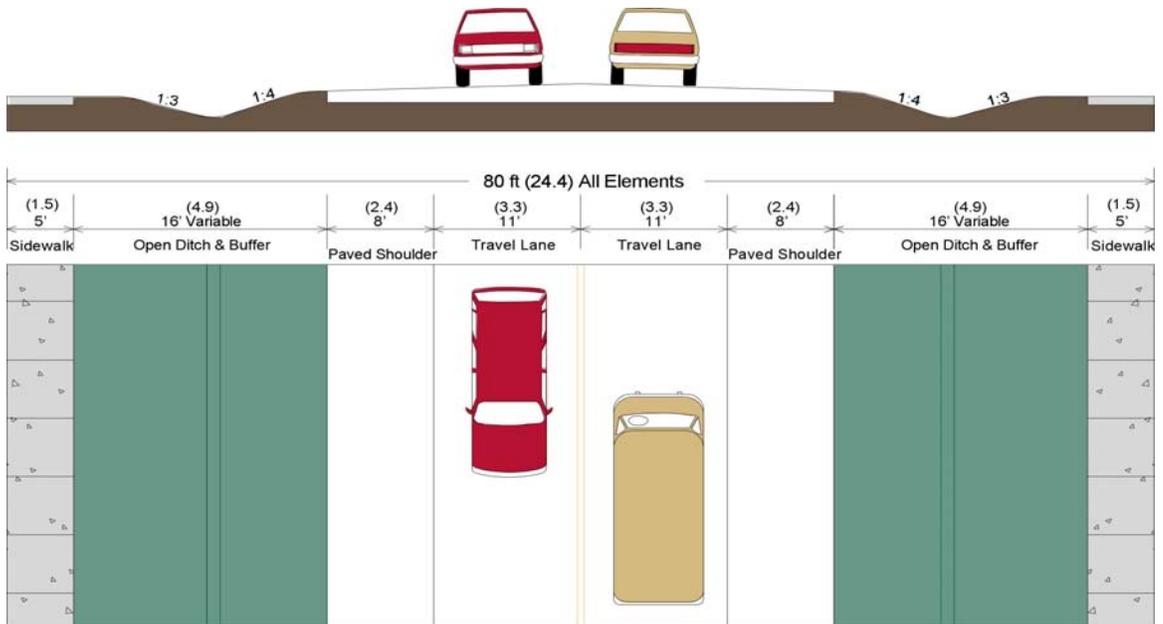
3. Preferred Elements:

- Landscaping of medians and buffers.
- If on a planned bikeway route, a Class I Shared Path is preferred.
- A non-traversable median is preferred (i.e. raised or depressed) for major retrofits and on new location.

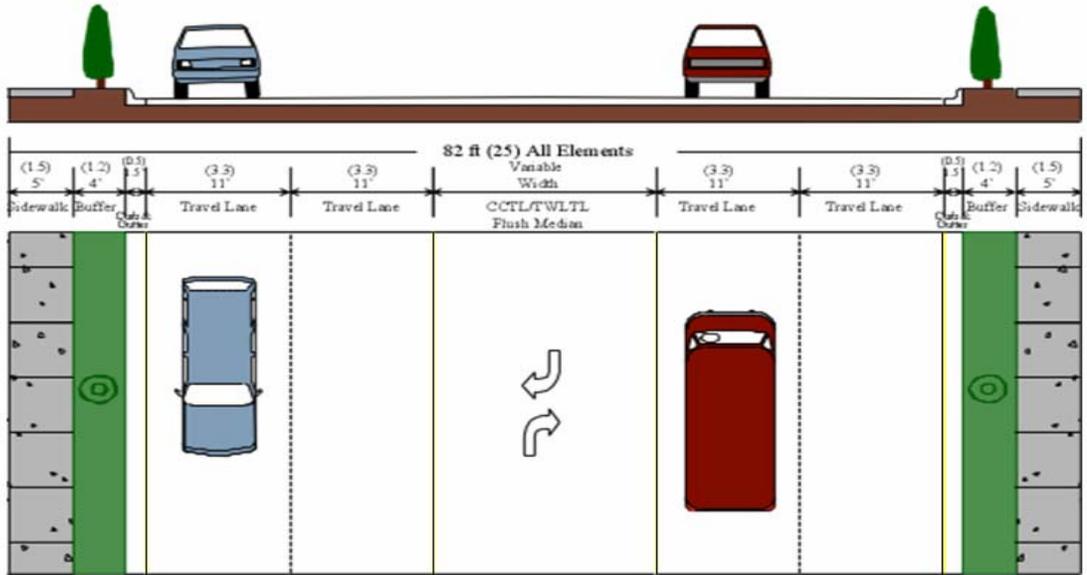
**Minor Arterial
Preferred**



Acceptable



Minor Arterial: An Example Not in CBD



CLASS V Collector Roadways

Collector Roadways connect local traffic with the arterial roadway network and provide easy access to adjoining land.

1. Required Elements:

- **All required design elements** must be included in the cross-section and located on publicly owned R.O.W. Sidewalks or bikeways may be located on permanent dedicated easements.
- **Curb and gutter** is required except in cases where terrain and/or forecast land use densities are compatible with an open shoulder design typically used in rural or exurban areas. The gutter width is not to be included in the travel lane.
- **Pedestrian friendly design is required**, including:
 - a. **Sidewalks** are required on both sides of the roadway. Minimum sidewalk width is 5 ft. (1.5 m.) and must be compatible with the Americans with Disabilities Act. *On state highways, AHTD policy is that sidewalks will be constructed on both sides of curb and gutter facilities through developed areas. In undeveloped areas, sidewalks will be considered on one side of the roadway unless evidence of pedestrian traffic warrants sidewalks on both sides of the roadway.*
 - b. **A buffer** is required between the back of curb and the sidewalk that is a minimum of 4 ft. (1.2 m.). However, no buffers are required in Central Business Districts. On state highways, AHTD policy is a 3 feet buffer with no obstructions allowed in the sidewalk and with vertical clearance of 80 inches for any overhanging object
 - c. **Safe pedestrian crossing provisions** are required to be demonstrated by the proposing jurisdiction or agency where more than 50 ft. (15.2 m.) of pavement (including the gutter) have to be crossed by a pedestrian where pedestrian crossing is anticipated based on land use. For design options and recommendations see the Pedestrian Facilities section of these standards.
- If on a **planned bikeway route**, the bicycle element must be included and must adhere to the bicycle design standards as specified herein.
- **Maximum lane width** is 10 ft. minimum (3.0 m.) for main travel lanes or 12 ft. maximum (3.6 m) lanes where the design speed and traffic mix warrant. There is a maximum of 2 through lanes in each direction.

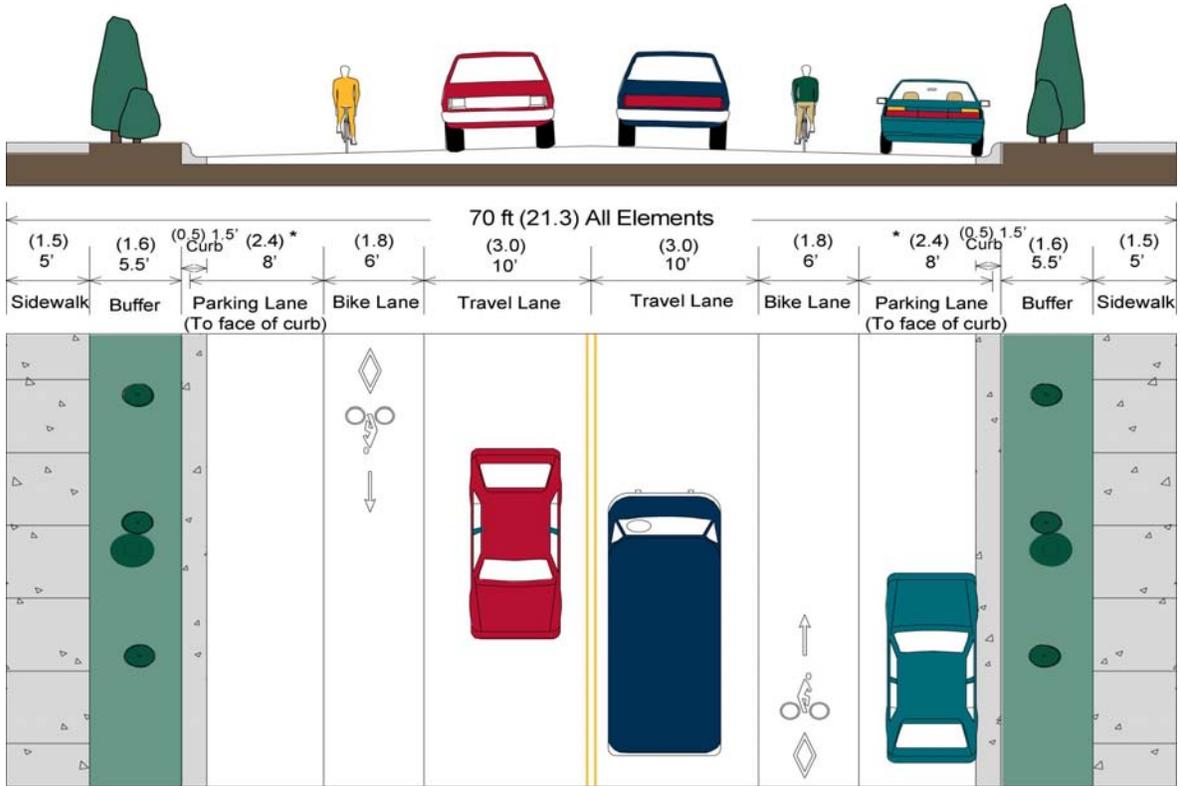
2. Optional Elements:

- 6 ft. minimum (1.8 m.) paved shoulder may be used on the first phase of a planned 4-lane, with or without curb and gutter.
- Parallel parking may be used on one or both sides of collectors, suggested 8 ft. (2.4 m.) minimum (including gutter).

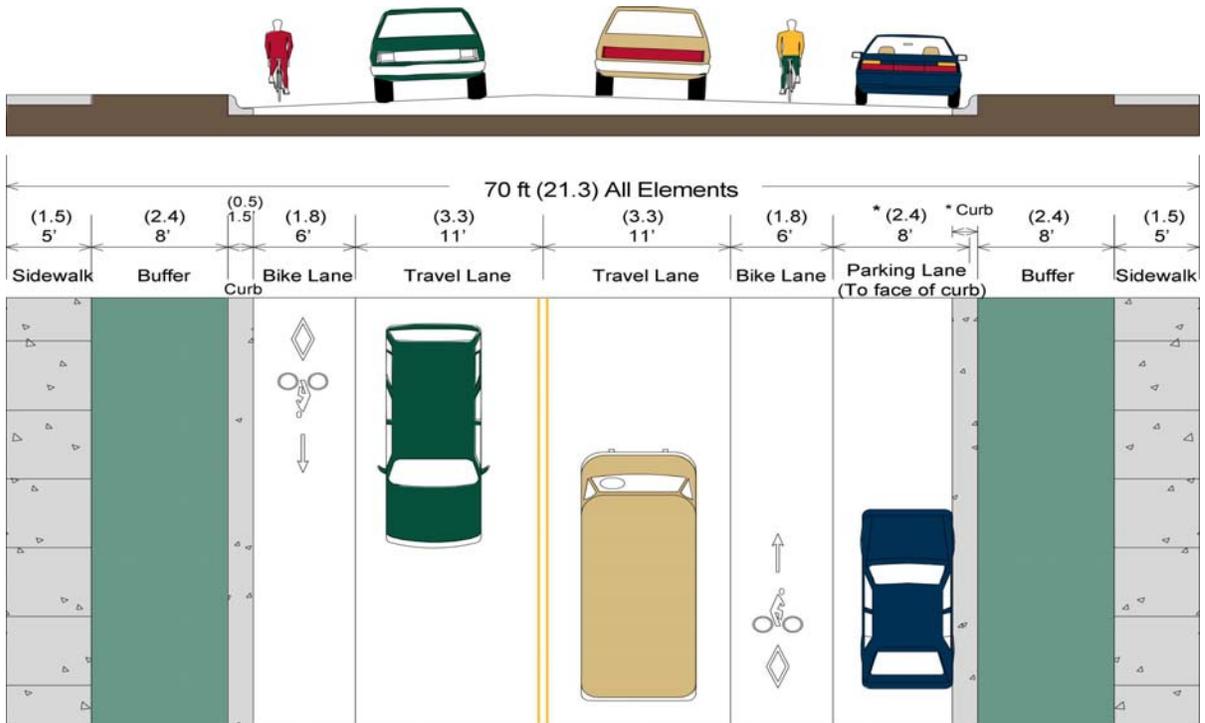
3. Preferred Elements:

- Landscaping of medians and buffers.
- If on a planned bikeway route, a Class I Shared Path is preferred.
- Non-traversable median (i.e. raised or depressed) is preferred if the roadway is four or more lanes.

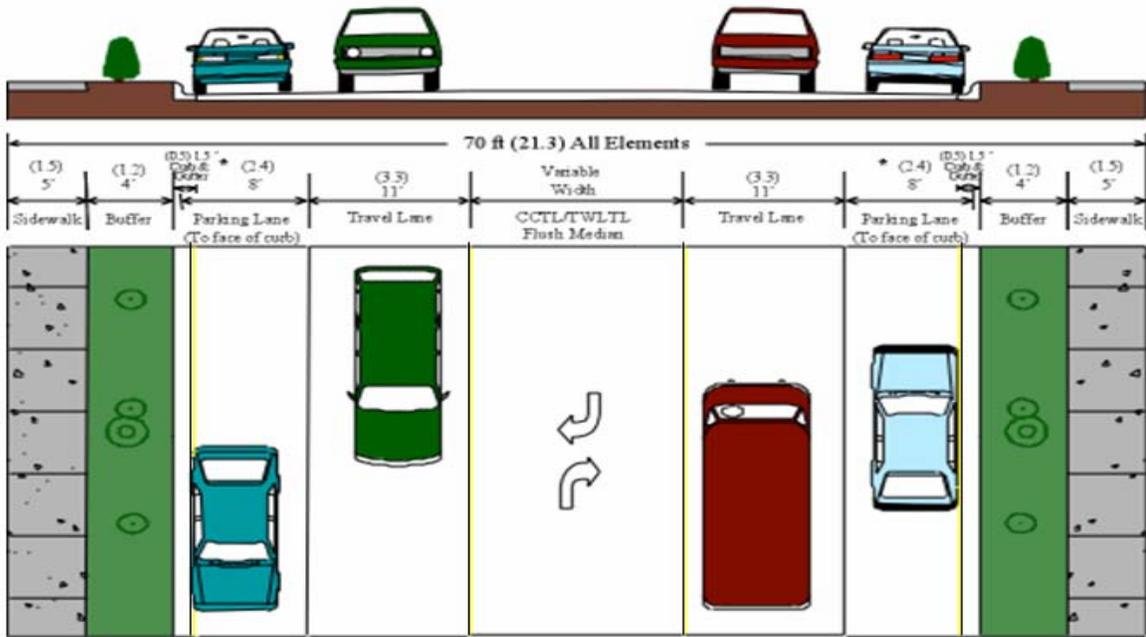
**Collector
Preferred**



Acceptable



Collector: An Example Not in CBD



CARTS

Bicycle Design Standards

Types of Bicycle Facilities

Bicycle paths are rated as suitable for three types of cyclists – Adults (Group A), Beginners (Group B) and Children (Group C).

Class I: Separate Shared Paths (Groups A, B/C)

Definition - A shared pedestrian/bicycle path that is physically separated from motorized vehicular traffic by an open space or barrier and either within the roadway right of way or within an independent right of way.

Two-way shared pedestrian/bicycle paths will be a minimum of 12 ft (3.6 m) wide.

Two-Way Separated Shared Pedestrian/Bike Path Preferred

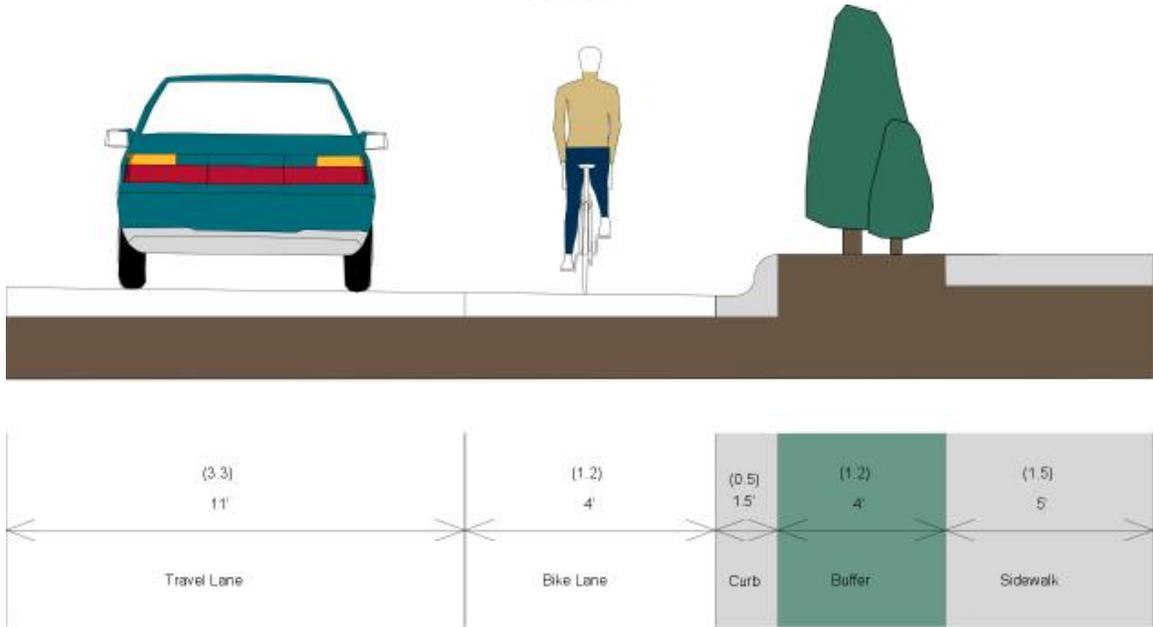


Class II: Bike Lanes (Groups A, B/C)

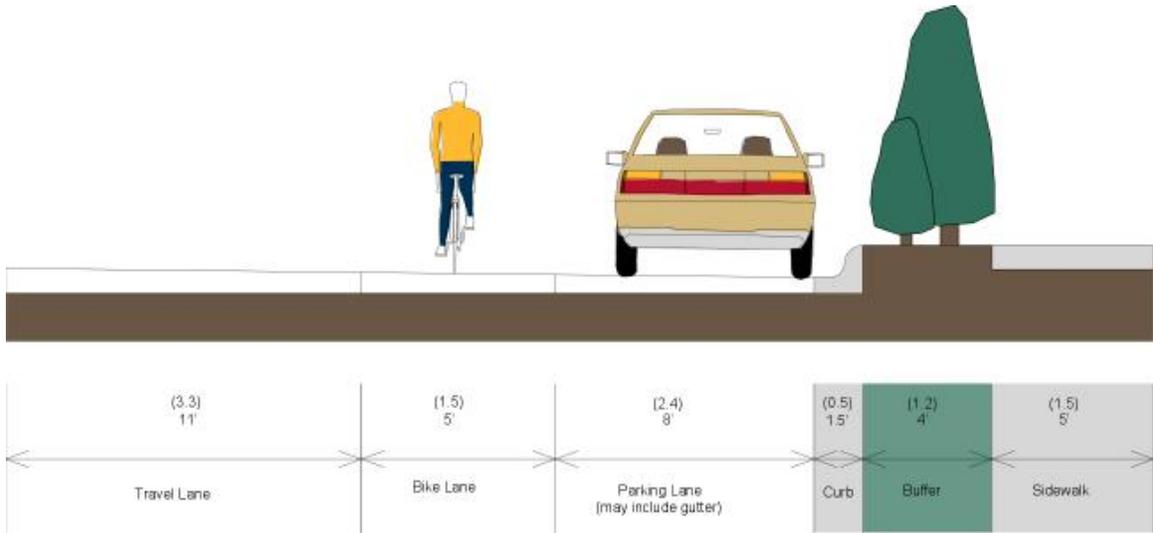
Definition - A portion of the roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bike lanes should always be one-way facilities carrying traffic in the same direction as adjacent motor vehicle traffic. Bike lanes should not be placed between parking spaces and the curb to minimize conflicts. They shall be a minimum of 4 ft (1.2 m) wide, not including the gutter pan.

One-Way Bike Lane Next to Curb
Preferred



One-Way Bike Lane with Parking Lane
Preferred

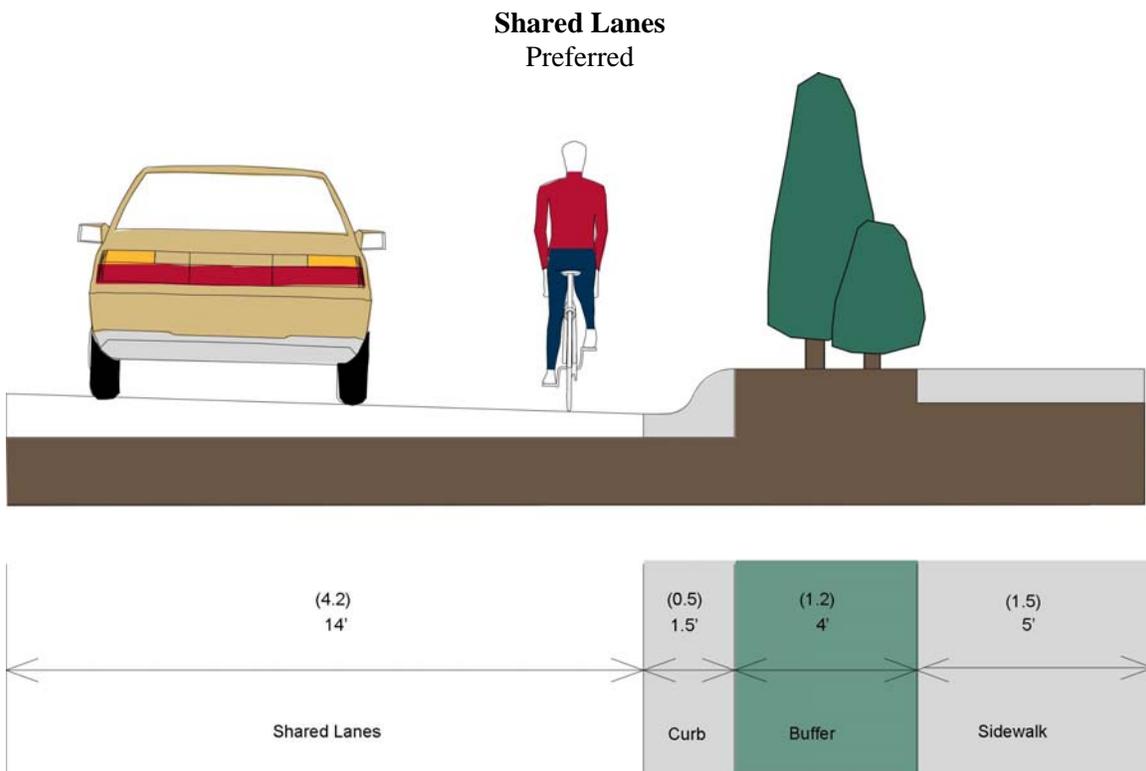


Class III: Shared Lanes (Group A)

Definition - Shared lanes are roadways with no special provision (except for signing of the bike route) for bicyclists. Shared lanes typically feature 12 ft (3.6 m) lane widths or less with no shoulders, allowing cars to safely pass bicyclists only by crossing the centerline or moving into another traffic lane.

Other Types of Shared Facilities:

Wide Outside Lane: An outside lane (right-most through traffic lane) with a width of at least 14 ft (4.2 m).



Shoulders: Shoulders must be paved and a minimum of 4 ft (1.2 m) wide when they are designed to accommodate bicycle travel. A width of 5ft (1.5 m) or greater is preferable and additional widths are desirable where substantial truck traffic is present, or where motor vehicle speeds exceed 50 mph (80 km/h).

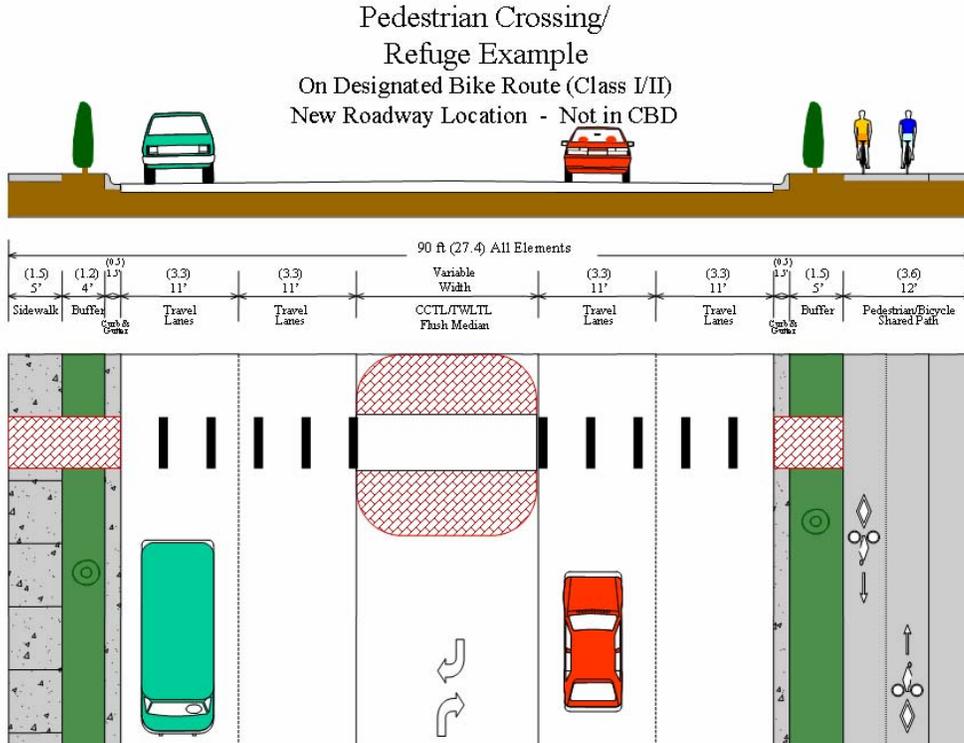
PEDESTRIAN CROSSING OPTIONS

Options include, but are not limited to:

- (1) **A non-traversable median refuge** -- should be at least 6 ft. (1.8 m.) wide from face-of-curb to face-of curb. The minimum width should not be less than 4 ft. (1.2 m.) wide. The island should not be less than 12 ft. (3.6 m.) long or the width of the crosswalk, whichever is greater.
- (2) At a signalized intersection, a striped pedestrian crossing with adequate crossing time allotted to the pedestrian.

Recommended time allotment is 4.0 seconds per linear foot to be crossed.²

Pedestrian crossing count-down signals are recommended in areas of heavy pedestrian movements.
- (3) **Mid-block pedestrian refuge.** The mid-block pedestrian crossing should be adequately striped, may be signalized or unsignalized, and may include in-pavement lighting to alert drivers of pedestrian presence at night.
- (4) **Pedestrian overpass or underpass,** although not generally recommended because of cost and handicap access issues. Significant variations in topography may make an overpass or underpass a viable solution, however.



²The Manual on Uniform Traffic Control Devices

PART II. Access Management Recommendations On the Regional Arterial Network

Introduction – Access management is a new item to the METRO 2030 planning process. To be successful it will require special attention from each member jurisdiction. Although access management by itself will not solve all transportation system problems, it can and should be a major part of both systems and project planning in order to improve safety and capacity on key corridors.

The Metroplan Board of Directors adopted the following access management recommendations as a means of implementing the objectives of the METRO 2030. The Board recommends that each member jurisdiction consider the adoption of these standards into their local master street plans and subdivision regulations covering at least the defined routes on the Regional Arterial Network.

Definition –

“Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.”

--Transportation Research Board (TRB) Access Management Manual

Purpose – Safety and Capacity

The purpose of access management is to provide all modes of transportation access to land development in a manner that preserves the safety and efficiency of the transportation system. An effective access management program can reduce crashes as much as 50%, increase roadway capacity by 23% to 45%, and reduce delay as much as 40% to 60%³.

Roadways are a critical public resource. The cost to construct, improve, or replace roadways continue to increase. By effectively managing roadway access, agencies can extend the life of roadways, increase public safety, reduce traffic congestion, and improve the appearance and quality of the built environment. Proper access management can be a valuable tool in the continuing effort to move people and goods in a safe and efficient manner.

Access management benefits not only the motorists but also cyclists, pedestrians, and transit riders. Through effective access management, they face fewer decision points and traffic conflicts, and have safe havens for street crossings. It is the intent of these standards along with the CARTS Roadway Design Standards, to guide the planning and design of roadways that facilitate the safe movement of these other modes as well as the motorist.

³ S&K Transportation Consultants, Inc. *Access Management, Location and Design*. Participant notebook for NHI Course 133078. National Highway Institute. FHWA, April 1998, revised April 2000.

Policy on Design of State Highways on the Regional Arterial Network

As part of the METRO 2030 Plan, the Metroplan Board adopted this policy on the design of state highways on the Regional Arterial Network.

A RAN corridor should always consider and balance its obvious purposes, which are not only to safely move traffic but also to enhance and support economic development. Metroplan encourages the design of the RAN network to carry large volumes of traffic for reasonably long distances within the region. The corridors are expected to support relatively dense mixed-use development supportive of public transit options. While the AHTD will determine the precise design of the RAN roadways on the state highway system, Metroplan acknowledges the need to jointly collaborate between local jurisdictions, CATA, Metroplan and AHTD to provide the most efficient and desirable RAN network that will serve the central Arkansas area.

Costs for Local Standards on State Highways beyond AHTD Standards

On state highways it is AHTD policy that the cost for any local standards which are beyond AHTD standards is the responsibility of others.

Recommended RAN Access Management Standards

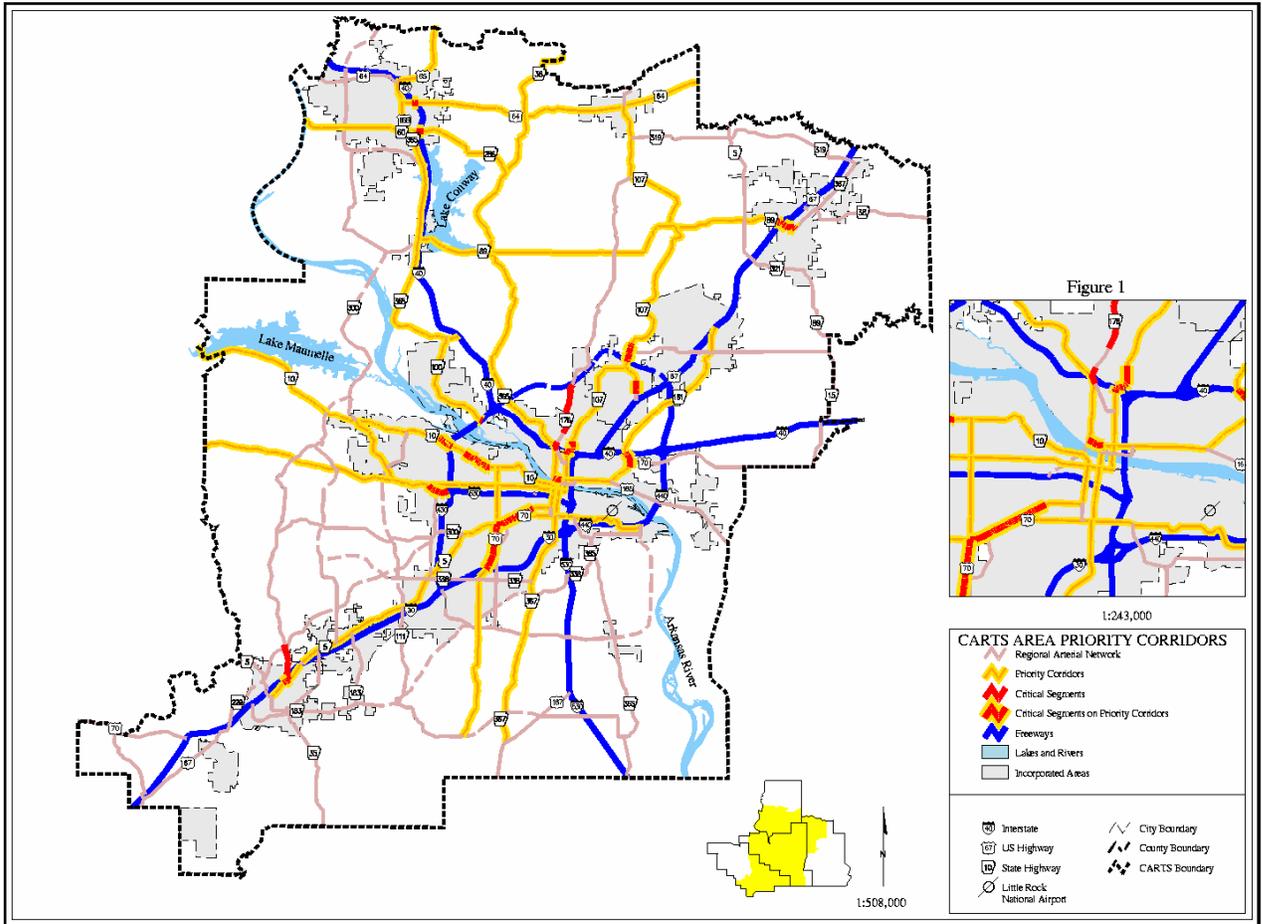
These access management standards are specifically designed to apply to the Regional Arterial Network (RAN) in the CARTS area, although they can be used more generally, if desired. The RAN is comprised of arterials and major collectors designed to provide feasible alternatives to the area's freeway network for intra-regional travel (see Figure 2). By definition, the roadways on this system are nationally and regionally significant and are intended to serve longer trips and move traffic safely and efficiently.

The recommended CARTS RAN access management policies, if adopted by the jurisdictions of the region, should lead to the development of a network of high capacity corridors crisscrossing the region.

This section is composed of the following:

1. Spacing Standards
2. Median Recommendations
3. Implementation Guidelines
4. Access Management Tools
5. Regulatory Tools for Local Jurisdictions
6. Corridor Specific Access Management Plans
7. Multi-Party Access Management Agreements
8. Technical Assistance

Figure 2. Regional Arterial Network



1. Spacing Standards

Spacing of non-traversable median openings, connections (i.e. driveways and/or side streets), and traffic signals are essential elements in establishing access spacing standards. Inadequate spacing of connections causes additional vehicle delay and increases crash frequency. Closely spaced or irregularly spaced traffic signals on arterial roadways result in frequent stops, unnecessary delay, increased fuel consumption, excessive vehicular emissions, and high crash rates⁴. To address these issues, following are the recommended minimum spacing standards. For new facilities on the RAN, a corridor access management plan should include these as minimum connection spacing.

Minimum Spacing Standards for Traversable Medians and Undivided Roadways

| Area Type | Median Opening Spacing | | Connection Spacing and Corner Clearance | | Signal Spacing |
|-----------|------------------------|------|---|----------|----------------|
| | Channelized | Full | > 45 mph | =<45 mph | |
| CBD | NA | NA | NA | 125 | NA |
| Urban | NA | NA | 440 | 245 | 1320 |
| Ex-Urban | NA | NA | 660 | 440 | 2640 |

Note: All distances are in feet and are measured as shown in Figure 3.

Minimum Spacing Standards for Nontraversable Median-Divided Facilities

| Area Type | Median Opening Spacing | | Connection Spacing and Corner Clearance | | Signal Spacing |
|-----------|------------------------|------|---|----------|----------------|
| | Channelized | Full | > 45 mph | =<45 mph | |
| CBD | NA | NA | NA | 125 | NA |
| Urban | 660 | 1320 | 440 | 245 | 1320 |
| Ex-Urban | 1320 | 2640 | 660 | 440 | 2640 |

Note: All distances are in feet and are measured as shown in Figure 3.

⁴ Gluck, J., H.S. Levinson and V. Stover. NCHRP 420: *Impacts of Access Management Techniques*. TRB, 1999.

2. Median Recommendations

The CARTS Roadway Design Standards recommends that on multilane arterials the cross-section include a nontraversable median. However, traversable medians, when used as two way left turn lanes, may be used and can be quite effective at lower volumes, lower speeds and lower access density.

At higher traffic volumes and higher speeds, a nontraversable median becomes increasingly safer than traversable medians. Under any of the following conditions, a nontraversable median should be considered and is recommended on RAN Corridors:

1. Present or future (25 year max.) traffic exceeds the Average Dailey Trips (ADT) threshold below and is within the range of design speed and access densities,

| Design Speed | Access Density* | ADT |
|--------------|-----------------|--------|
| 0-30 | 0-84 | 28,000 |
| 31-45 | 0-43 | 28,000 |
| 0-30 | >84 | 24,000 |
| 31-45 | >43 | 24,000 |

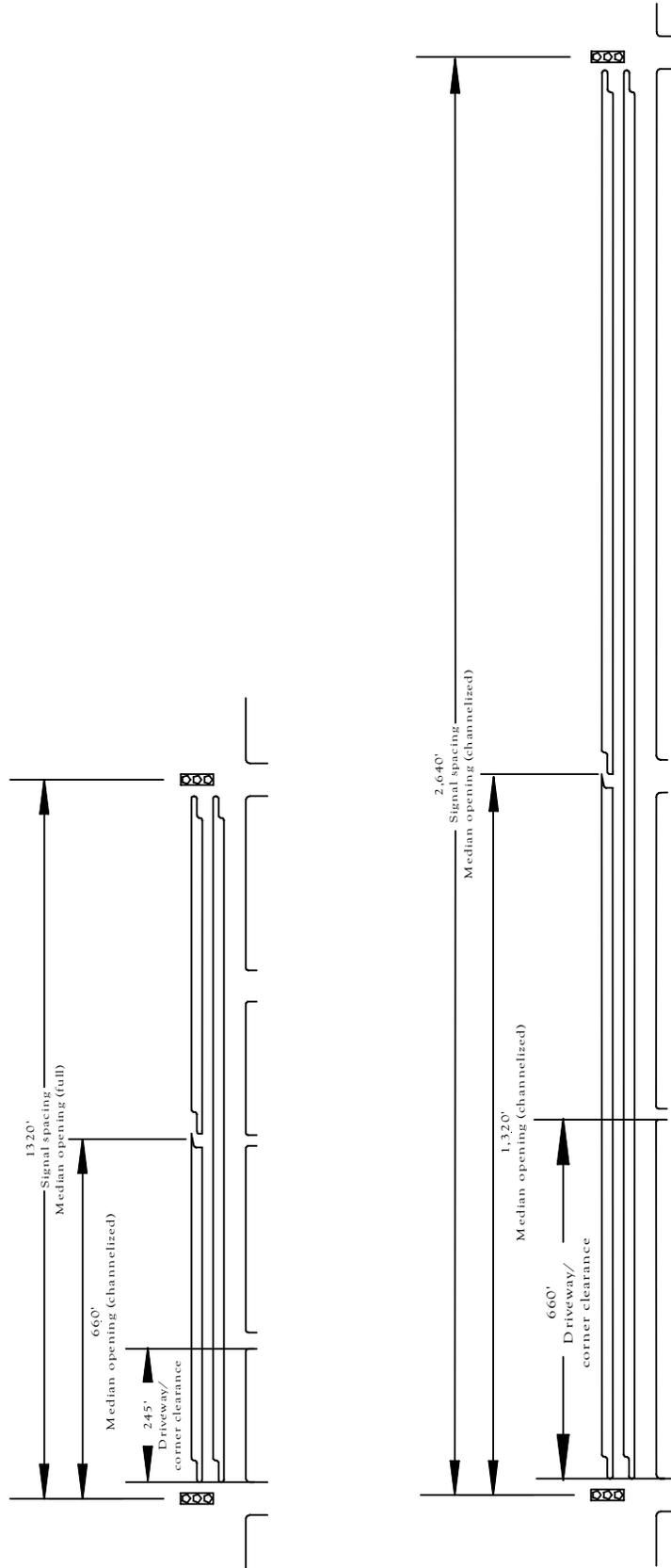
*Total number of access points on both sides of the road per mile

2. Design speed exceeds 45 mph,
3. Roadways on new locations, and
4. Any roadway widening beyond four main travel lanes (2 each direction).

3. Implementation Guidelines

The access management standards are easiest to implement on roadways on new location since there is typically little or no existing development in the corridor. On existing roadways, the access management standards should serve as the starting point from which corridor specific access management plans can be tailored to best fit the characteristics of a corridor. If high volumes, frequent or poorly spaced driveways, or high accident rates are resulting in safety and/or capacity problems along a corridor, initial access management efforts should focus on driveway consolidation and proper spacing of streets and driveways. Major reconstruction of an existing roadway or major land redevelopment along an existing roadway are opportunities to apply access management standards and principles more broadly.

Figure 3
Examples of Access Management Spacing Standards



4. Access Management Tools

The following tools are useful in implementing access management standards:

1. Access Spacing (driveways and intersecting streets)

The spacing, location, and design of access points are crucial to driver safety and roadway efficiency. Each new access point introduces conflicts and friction into the traffic stream. With more conflicts comes a higher potential for crashes, and the resulting friction translates into longer travel time and greater delay⁵. By controlling the location and type of access points on an arterial the efficiency of the roadway is maintained and a safer roadway environment is created for drivers and pedestrians.

1.1 Driveway Consolidation – A single parcel may have multiple driveways that can be consolidated into a single drive. Or closely spaced driveways on abutting parcels can be consolidated into a single drive on the property line with a joint access agreement between the property owners.

1.2 Joint Access Agreements – Two or more abutting property owners can enter into a joint access agreement between their properties to allow all properties access to a single access point. This is most beneficial with a nontraversable median in order to secure as many businesses access to a median break as possible.

1.3 Driveway Design – Good driveway design that can allow deceleration and acceleration space outside of the main travel lanes and provides a deep driveway throat that allows cars to enter and leave the main corridor more smoothly.

1.4 Access Roads or Drives – A shared access roadway among abutting property owners, either in front of or behind their properties serves the same purpose as joint access agreements. This function can also be met by a well-connected network of local streets just off of the main corridor.

2. Medians

The portion of the roadway that separates opposing traffic flows is called a median. Turning traffic, particularly left turns, increase vehicular conflicts as well as conflicts with pedestrians and bicyclists. They result in increased crashes, delay, and complicate signal timing. The type of median determines the location where vehicles turn and pedestrians can most safely cross a roadway. Therefore, the presence and type of median has a significant impact on the operations, safety,

⁵ TRB Access Management Manual. 2003

and access to adjacent land uses along the roadway. Median types can be grouped as follows:

2.1 Traversable Medians

Continuous two-way left-turn lane (TWLTL) – a continuous lane located between opposing traffic streams that provides a refuge area for motorists traveling in either direction seeking to complete left turns from both directions.

Narrow or Traversable Medians – a median that by its design does not physically discourage or prevent vehicles from entering upon or crossing over it, including painted medians;

2.2 Nontraversable Medians – a median that by its design physically separates traffic traveling in opposite directions, such as a concrete barrier or a landscaped island.

3. Signal Spacing and Coordination

Closely spaced or irregularly spaced traffic signals on arterials roadways result in frequent stops, unnecessary delay, increased fuel consumption, excessive vehicle emissions, and high crash rates. Alternatively, long and uniform signal spacing allows timing plans that can efficiently accommodate varying traffic conditions during peak and off-peak periods as well as adoption of a traffic control system that can accommodate changes that occur over time. Therefore, selecting a long and uniform spacing of signalized intersection is an important element in establishing access spacing standards.

5. Regulatory Tools Available for Local Jurisdictions

Access management is difficult to accomplish solely through access permitting and roadway improvement. A variety of other means are available to local jurisdictions to aid in the process of implementing a successful access management plan. Comprehensive plans, zoning and subdivision regulations, and development review are a few of these tools.

1. **Zoning.** Local zoning regulations are a set of standards for land use, parking and loading, building setbacks, and lot dimensions. Minimum lot frontages, dimensional analysis requirements, and building setbacks allow for greater driveway spacing and flexibility for on-site circulation. Corridor overlay zones, used on high-priority corridors, add special requirements that allow customizing to unique circumstances of a particular corridor.

- 2. Subdivision Regulations.** Subdivision regulations guide the division and subdivision of land into lots, blocks and public ways. Subdivision regulations provide an opportunity to ensure proper access and street layout in relation to existing or planned roadways.
- 3. Traffic Impact Assessment.** Traffic impact assessment is a form of access management used at the development phase of a project. A Traffic Impact Assessment is a brief study that assesses the impacts of development on the surrounding roadways and recommends mitigation actions.

List of Potential Specific Local Strategies

1. Increase minimum lot frontage and setback requirements along major roadways.
2. Increase the minimum lot size for corner lots to improve corner clearance.
3. Regulate access to out parcels.
4. Provide an incentive for combining access points or relax parking and dimension requirement where necessary to achieve shared drives.
5. Optimize driveway locations and access design in the development review process.
6. Establish policies for internal access for residential subdivisions and manage lot splits to promote shared access to and from major thoroughfares.
7. Regulate flag lots and restrict them along major roadways.
8. Consider a corridor overlay ordinance for high-priority corridors.
9. Develop a connected local road network of side streets and parallel roads to accommodate desired land development along major thoroughfares.

6. Corridor Specific Access Management Plan

A corridor specific access management plan goes beyond the traditional roadway improvement study by considering land development and access. It is a versatile planning tool that is used to provide solutions to existing problems and prevent future access problems. These plans should be specific to the existing conditions of that corridor and could expand on the spacing standards outlined previously.

An example of such expanded language is the following language from the City of Little Rock's Access Management standards on driveways at intersections:

“No driveway access shall be allowed within the limits of any arterial or collector street intersection. Driveway access on the far side of the intersection may be considered 200- ft from the intersecting streets when limiting the driveway to right turn in and right turn out only. The limits of the intersection include any and all auxiliary left and right turn lanes and necessary tapers from the standard roadway section to the full intersection cross-section.”

Metroplan's experience with implementing access management plans has emphasized individual negotiation with businesses along the targeted corridor. It is important to work with each business to craft an access solution for them consistent with the safety and capacity improvements desired in the corridor. A corridor specific access management plan is most useful in showing the entire segment of the corridor under consideration and how each business is being treated. Most business owners recognize the need to improve safety and corridor capacity, but are very concerned that their business be treated fairly and equally with others in the corridor.

Corridor access management plans can also be very useful where Regional Arterial corridors cross local jurisdictions' borders and/or where they are owned by another entity such as the state highway department. The issue of consistency, both for driver expectations and for treatment of businesses along the corridor, recommends a corridor access management plan.

Before a capacity improvement project (i.e., minor or major widening, intersection improvements, signal coordination, or intelligent transportation system application) on a section of RAN corridor, it is recommended that an access management plan be developed.

7. Multi-party Access Management Agreements

Local jurisdictions may deem it beneficial to enter into a multi-party access management agreement for RAN corridors with other local governments along the corridor, with Metroplan and/or the state highway department if the corridor is a state highway. Some jurisdictions have found such pacts beneficial in maintaining the integrity of the access management plan.

8. Technical Assistance

The Metroplan staff is available to assist any member jurisdiction in developing their own access management standards, in educating the public and local businesses about the benefits of access management, and in assisting in the application of access management standards to specific corridors.

References

The Recommended Access Management Standards herein are derived from the following sources:

Access Management Manual (Transportation Research Board)

TWLTL may be appropriate for the following roadways:

- Roadways in urban and suburban areas with a projected average daily traffic of less than 24,000 vehicles per day;
- Collector streets in developing residential areas where residences front on local streets that intersect the collector street;
- Collector streets in developing suburban areas where direct access is to be provided to small abutting properties; and
- Collector streets in developed urban and suburban areas where there is no crash pattern that is correctable by a raised median.

A nontraversable median is more desirable than a TWLTL for the following situations:

- All new multilane urban arterial roadways,
- Existing multilane urban arterial roadways with ADT in excess of 24,000 to 28,000 vehicles per day, depending on local conditions;
- Rural multilane roadways;
- Multilane roadways with a high level of pedestrian activity; and
- High crash locations (that are correctable with left-turn treatment) or areas where it is desirable to limit left turns to improve safety.

AASHTO (A Policy on Geometric Design of Highways and Streets 2001)

This type of operation (TWLTL) works well where the speed on the arterial highway is relatively low (40 to 70 km/hr [25-45] mph) and there are no heavy concentrations of left-turning traffic.

Florida Department of Transportation

Policy Enacted in 1993

“All multilane facilities shall be designed with a raised or restrictive median except four-lane sections with design speeds of 40 mph or less. Facilities having design speeds of 40 mph or less are to include sections of raised or restrictive median for enhancing vehicular and pedestrian safety, improving traffic efficiency, and attainment of the standards of the Access Management Classification of that highway section.”

Texas Design & Access Management Manual

Texas Design Standards considers a Raised Median when volumes reach 20,000 ADT.

Roadways with nontraversable medians are safer at higher speeds and at higher traffic volumes than undivided roadways or those with continuous two-way left-turn lanes (TWLTL). Numerous studies from across the nation have been conducted relating to undivided, TWLTL, and divided roadways with a nontraversable median. Based on studies, it can be concluded that roadways with a nontraversable median have an average crash rate about 30 percent less than roadways with a TWLTL. Additionally, where ADT exceeds 20,000 vehicles per day and the demand for mid-block turns is high, a raised median should be considered.

| Other TX State Highway Minimum Spacing | |
|--|---|
| Posted Speed/Design Speed | Connection Spacing and Corner Clearance |
| <= 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| >50 | 425 |

Regional Arterial Network Study Access Management Standards (Based on Florida DOT Standards)

| Class | Median Opening Spacing | | Connection Spacing and Corner Clearance | | Signal Spacing |
|-------|------------------------|------|---|----------|----------------|
| | Channelized | Full | > 45 mph | =<45 mph | |
| 1 | NA | NA | NA | 125 | NA |
| 2 | 660 | 1320 | 440 | 245 | 1320 |
| 3 | 1320 | 2640 | 660 | 440 | 2640 |

PART III Implementation Procedures

Purpose

The CARTS Roadway Design Standards, including pedestrian and bike elements, are intended to inform the implementing agencies and member jurisdictions as to the MPO's roadway and pedestrian/bicycle typical cross sections that best implement the vision, goals and objectives expressed in the long-range transportation plan. Of particular regional concern is the development and implementation of the strategic regional network comprised of the regional arterial network, strategic regional transit investments and strategic regional bikeway connectors. Implementation of this strategic network is critical in maximizing overall transportation investments, while providing the region with real transportation choices.

Transportation Improvement Program Project Review

Monitoring implementation of the long-range plan is accomplished primarily through the CARTS Transportation Improvement Program (TIP) Project Review process. This process is intended to foster interaction and understanding among member governments and/or implementing agencies regarding the likely impacts of a proposed project design on an individual city or adjacent locality, the overall transportation system and the long-range transportation plan particularly. Review of a project's preliminary design also helps reinforce consistency of both plan and policy application on all parties concerned.

Applicability

The Project Review Process applies to all transportation projects (roadway, transit, pedestrian or bike) proposed for inclusion in the CARTS TIP.

TIP Process and Project Review

In the TIP, projects are funded for different phases. Those phases generally are (1) preliminary engineering (PE), (2) rights-of-way (ROW) and utilities, and finally (3) construction.

Preliminary engineering is included in the first year of the TIP, with the remaining project phases listed in any of the outer years. Before a project may advance to a future phase (right-of-way, utilities and/or construction), the project, as designed in preliminary engineering, must be reviewed by the MPO staff and the Technical Coordinating Committee (TCC) and approved by the MPO Board.

Project Review by the MPO is not a review of engineering design practice, but rather a review of the project's design for consistency with 1) the overall project concept as originally proposed by the implementing jurisdiction/agency, 2) locally adopted master street, pedestrian and/or bicycle plans, and 3) the regional long-range transportation plan.

Depending on the complexity of an individual transportation project, MPO project review approval can be requested as early as 30% into the preliminary engineering design phase. Following approval by the MPO of the design, any substantive change in the approved design must also be reviewed and approved. A request for scope change is handled in the

same manner as for design approval, but may come at any time and any phase of the project.

Waivers

Waivers to any of the design standards listed herein may be requested at time of submission of the project for review. The single requirement before asking for a waiver is that the proposing jurisdiction or agency must demonstrate having made a good faith effort to implement the standard prior to asking for a waiver from it.