



American Association of
State Highway and
Transportation Officials

James C. Codell, III, President
Secretary
Kentucky Transportation Cabinet

John Horsley
Executive Director

October 23, 2002

Mr. Scott Windley
Architectural and Transportation Barriers Compliance Board
Office of Technical and Informational Services
1331 F Street NW, Suite 1000
Washington, DC 20004-1111

SUBJECT: AASHTO Comments and Recommendations on the US Access Board's
Draft Guidelines for Accessible Public Rights-of-Way

In response to the federal notice of availability of the draft *Guidelines for Accessible Public Rights-of-Way*, the American Association of State Highway and Transportation Officials (AASHTO) respectfully submits the attached comments and recommendations. These comments were adopted by the AASHTO Board of Directors on October 14, 2002, and represent the official AASHTO recommendations on the draft accessibility regulations.

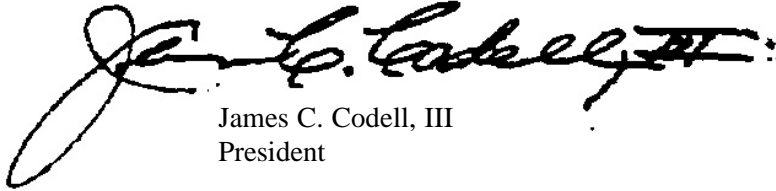
AASHTO would like to thank the US Access Board for the opportunity to comment on the draft guidelines at this early stage in their development. We believe that these guidelines will be an important step in improving accessibility on our transportation system throughout the country. In addition, AASHTO appreciates the Access Board's extensive outreach efforts in the preparation of the draft guidelines, including technical experts from the transportation and public works fields in addition to advocates for the disabled community.

However, as stated in the attached comments, additional work is needed to ensure that the final rule does not impose overwhelming costs and manpower demands, as well as liability exposure, on the State DOTs. AASHTO requests that the US Access Board provide cost estimates for the implementation of these guidelines to illustrate the potential financial impacts on the implementing agencies prior to the release of the Notice of Proposed Rule Making. In addition, we feel that several proposed guidelines will have unintended negative effects on safety and/or accessibility due to their restrictive wording. AASHTO recommends keeping the guidelines as flexible as possible to ensure that the best solution can be implemented in any given situation. AASHTO would like to offer its expertise and the expertise of its members to work cooperatively with the Access Board to refine specific technical issues and develop further guidance.

Finally, it should be noted that several million dollars worth of research is currently underway through such agencies as the National Institutes of Health and the Transportation Research Board that addresses many of the issues discussed in the draft guidelines. Research topics include pedestrian safety and accessibility at roundabouts and free-flow turn lanes, innovative treatments at unsignalized pedestrian crossings, and guidance on installing accessible pedestrian signals. AASHTO feels it would be premature to make final decisions on these issues without the benefit of the latest research.

Thank you for your consideration of the views of the State Transportation Departments as you develop a Notice of Proposed Rule Making on accessible public rights-of-way. If you have questions or need additional information on the attached material, please contact Dr. Anthony Kane, Director of AASHTO's Office of Engineering and Technical Services, at (202) 624-5812.

Sincerely,

A handwritten signature in black ink, appearing to read "James C. Codell, III". The signature is fluid and cursive, with a large loop at the beginning and a trailing flourish at the end.

James C. Codell, III
President

Attachment
cc: John Horsley

Comments and Recommendations
on the
Draft Guidelines for
Accessible Public Rights-of-Way

Submitted to:
United States Architectural and Transportation Barriers
Compliance Board

By:
American Association of State Highway
and Transportation Officials

October 2002

Adopted by resolution of the AASHTO Board of Directors
October 14, 2002

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**Comments and Recommendations on the
Draft Guidelines for Accessible Public Rights-of-Way
October 2002**

Introduction

AASHTO would like to thank the US Access Board for the opportunity to comment at this early stage on the draft *Guidelines for Accessible Public Rights-of-Way*. These guidelines will be an important step in improving accessibility for disabled persons throughout the country on our transportation system. We applaud the Access Board's inclusion of a wide range of people and expertise on the Public Rights-of-Way Access Advisory Committee, which developed the *Building a True Community* report, on which these draft guidelines are based. It is obvious that the work that went into developing the draft guidelines was extensive, and we appreciate these efforts.

As we enter the next phase of development, which includes the refinement of specific technical issues and the development of further guidance and research, AASHTO would like to offer its expertise and the expertise of its members in working cooperatively with the Access Board. Currently, the guidelines provide little or no allowance for engineering judgment to be exercised in the design and construction of these facilities to ensure the safety and welfare of the public, especially in situations where we feel the guidelines will produce unintended consequences. In many cases, extremely specific requirements have been set forth, and there appears to be very little room for developing alternate and sometimes better solutions. These issues need to be addressed appropriately before the release of a proposed rule.

The following pages contain AASHTO's comments on the draft guidelines, based on reviews by several State Department of Transportation (DOT) experts representing a cross-section of transportation engineering disciplines, including planning, design, construction, safety, maintenance, public transportation, and others. We feel that these responses represent "real life" concerns and issues that will be encountered if the guidelines are released as-is, and that it would be better to address them now rather than wait until there are problems and conflicts in the implementation phase. AASHTO welcomes the opportunity to work cooperatively with the US Access Board to address these issues, and stands ready to offer assistance and expertise where it is needed.

Broad Issues/Concerns

- **Maintenance Implications** – It is unclear to AASHTO what type and amount of additional maintenance these regulations imply for the long term, as well as how often all aspects of the public right-of-way will need to be inspected for consistency with these accessibility guidelines. The increase in inspection, inventory, and maintenance that would be needed appears to be tremendous given the wide range of facilities and features that must be accommodated, including complex signal systems, street furniture, elevators, work zones, and additional signing. In addition, start-up costs for developing a system to track all of these features and mainstream them into DOT operations, as well as into the transportation funding approval process, will take a significant effort on the part of the States and local jurisdictions.
- **Relationship to Other Regulations** – AASHTO is also unclear as to how these proposed guidelines relate to other regulations that must be met within the transportation field, such as air quality, historical preservation, and environmental protection regulations. Many of the proposed accessibility guidelines, if implemented, could have profound impacts on the ability of States and local jurisdictions to meet these existing federal mandates. These conflicts could result in substantial penalties being levied or the denial of transportation funding if existing regulations are not met; or,

conversely, they could result in the inability of the State or local area to implement portions of the accessibility guidelines in order to meet the existing laws. Additional details are included in the discussion of specific draft guidelines, but a few examples include the following:

- Air quality regulations could be an issue if numerous additional traffic signals are installed, or if traffic congestion is increased through the wholesale reduction in “green time” for motor vehicles.
- Historic preservation issues could be a problem if the alterations include the installation of non-historic treatments, such as concrete sidewalks in historic districts that are traditionally brick or stone, or infringements on historic buildings or properties.
- Environmental regulations may be in conflict with these guidelines where additional right-of-way is required, since a strong demonstration of need is required for such acquisitions.

It will need to be determined which regulations take precedence when there is a conflict and additional guidance will need to be provided to the State DOTs and others when this issue is resolved. Additional information should be sought from groups that deal with these issues on a regular basis.

- **Cost Implications** – Obviously, cost will always be an issue when new unfunded mandates are being proposed. As discussed in AASHTO’s recent *Bottom Line Report*, 2002, estimated annual needs with regard to the nation’s transportation system have reached \$90 billion, while the current federal highway program hovers around \$30 billion per year. This discrepancy represents a tremendous shortfall in funds, and it means that State DOTs and local jurisdictions are already stretching their dollars extremely thin. Several proposals contained in the draft guidelines would carve another sizable chunk out of the pie. Finding additional funding sources for these projects, as opposed to simply earmarking existing highway funding, would be a significant help in getting the needed accessible features out on the highway system in a timely manner. AASHTO calls on the US Access Board to provide cost estimates and a financial plan for the implementation of these guidelines to illustrate the potential financial impacts of their proposed solutions to accessibility issues on the implementing agencies prior to the release of the Notice of Proposed Rule Making. AASHTO is willing to work cooperatively with the Access Board in this endeavor.

Technical Comments

- **Construction Tolerances** – Tolerances within the highway construction industry are rarely to the nearest millimeter – and, in some cases, inches are too precise. Highway construction tolerances are not the same as those in architectural design. The Access Board needs to revise the units of measure used throughout these guidelines appropriately based on the item being measured. Examples of this excessive precision include the maximum curb ramp length of 4,570 mm and a maximum vertical change along the pedestrian access route of 6.4 mm. There is concern that this precision is not achievable in the field and that the State DOTs could be held liable if the dimensions of accessibility features are off by as little as a millimeter. At its Annual Meeting in October 2002, AASHTO funded a research project through the National Cooperative Highway Research Program (NCHRP), which is a subgroup of the National Academy of Sciences, to develop appropriate construction tolerances for the various items listed in the draft guidelines. The results of this study will be provided to the Access Board to assist in the development of appropriate highway construction tolerances within the proposed guidelines.
- **Metric Conversions** – Metric conversions should be soft conversions based on existing highway construction conversion standards. This will help minimize such odd and unachievable dimensions as 6.4 mm maximum change in vertical, 305 mm minimum post spacing, and 1,220 mm minimum pedestrian access route width.

- **Notation for Slope** – AASHTO recommends the use of current standard notation for slope, e.g., 1V:48H, which stands for “1 vertical to 48 horizontal,” throughout the guidelines. This notation was developed to prevent confusion between the metric and US Customary notations, which are exactly opposite each other (1:48 in metric is the same as 48:1 in US Customary). Percentages are also OK. In addition, AASHTO suggests using the terms “steeper” and “shallower,” instead of “greater than” and “less than,” when referring to slopes.

Definitions (from Section 1101.3, *Defined Terms*)

Proposed Revisions

- **Accessible Pedestrian Signal** – AASHTO proposes using the definition of Accessible Pedestrian Signal that is included in the *Manual on Uniform Traffic Control Devices* (MUTCD, 2000, p. 4A-1), which is a federally-mandated set of standards for the transportation industry: “A device that communicates information about pedestrian timing in non-visual format, such as audible tones, verbal messages, and/or vibrating surfaces.”
- **Cross Slope** – Revise this definition in the draft guidelines by deleting the second sentence, which states: “This is usually called superelevation on curves in the public right-of-way (see superelevation).” This additional information is confusing and inaccurate from an engineering perspective, and the term “superelevation” does not appear in the draft guidelines. The definition for cross slope should be as follows: “The slope that is perpendicular to the direction of travel.”
- **Pedestrian Access Route** – Refine this definition to state: “An accessible corridor *intended for* pedestrian use within the public right-of-way.” AASHTO is concerned that highway projects such as shoulder closings in rural areas or pothole-filling projects on parts of the roadway not intended for pedestrian use (but which may, from time to time, be used by pedestrians) would invoke the need to provide an alternate circulation path, which would constitute a huge additional expense. In addition, it seems clear that it was not the Access Board’s intent to require shoulders or other parts of the roadway (exclusive of the crosswalks) to fall under the other requirements in these guidelines, such as the maximum cross slope of 1V:48H (Section 1103.4) or the restriction on changes in level (Section 1103.8), but it is possible that this interpretation could be promulgated if the phrase “intended for” is not added to the definition.

Proposed Additions

- **Alteration** – A tremendous amount of clarification is needed related to the term “alteration,” as well as the requirements that it triggers. Currently, this term is open to a wide range of interpretation, which is likely to expose public agencies to potential lawsuits. In addition, standard engineering terminology needs to be used to ensure that the requirements are understood and implemented correctly. If a concise definition cannot be developed that adequately explains the varying levels of alteration and their associated requirements/improvements, then additional guidance in this area will be necessary. AASHTO proposes working cooperatively with the Access Board to address this issue. (See also comments under *Section 1102.2.2, Alterations.*)
- **Edge Delineation** – AASHTO recommends removing the term “barrier” from the guidelines and replacing it with “edge delineation” or a similar phrase where appropriate. As currently used, the term “barrier” has a different meaning from that commonly understood by transportation engineers, which will lead to confusion regarding what is required or desired. The AASHTO *Roadside Design Guide*, a nationally recognized set of guidelines for roadside safety issues, defines “barrier” as follows:

A roadside barrier is a longitudinal barrier used to shield motorists from natural or man-made obstacles located along either side of a traveled way. It also may be used to protect bystanders, pedestrians, and cyclists from vehicular traffic under special conditions. (Roadside Design Guide, p. 5-1)

To the typical highway engineer, examples of barriers include the massive concrete “Jersey” barriers seen often along major freeways, steel or timber guardrail, and 3-strand cable systems. These barriers must meet very specific performance criteria to ensure that they can safely contain and redirect errant motor vehicles.

Based on the usage of the term “barrier” in the draft guidelines, it is assumed that barriers could include walls, raised lips, or even planting or vegetative strips. The primary purpose behind this type of barrier seems to be to indicate to the visually impaired that: 1) the sidewalk is diverging at a parallel curb ramp (Section 1104.2.2.4); or 2) they are leaving the pedestrian access route and they should redirect themselves appropriately (Section 1105.6.1). Serious consideration should be given to renaming this feature for clarification purposes, as well as to prevent the construction or installation of many unintended and undesired roadside features that could be safety hazards for motor vehicle users.

- **Roadway** – AASHTO recommends defining the term “roadway” to include bridges to ensure that the ADAAG requirements for “structures” (a common term for bridges in transportation engineering) are not applied to bridges. Bridges are natural extensions and connections of roadways and are part of the public right-of-way; thus, their accessibility requirements should be guided by the proposed guidelines for public rights-of-way. A simplified version of the definitions for “highway” and “roadway” found in the MUTCD (2001, p. 1A-16 and 1A-19) could be used: "The portion of the public way ordinarily used for vehicular travel, shoulder, or parking, inclusive of bridges, but exclusive of the sidewalk or curb."
- **Roadway Preservation and Preventative Maintenance** – AASHTO recommends using the following definition for roadway preservation and preventative maintenance, and feels that these activities should be exempt from the requirement to install additional accessibility features:

Roadway Preservation and Preventative Maintenance are activities undertaken to provide and maintain serviceable roadways and/or planned strategies of cost-effective treatments to an existing roadway and its appurtenances that preserve the system, retard future deterioration, and maintain the functional condition of the system. Also, the process used to extend the functional condition by adding longer life to the roadway surface without increasing the structural capacity of the roadway.

Proposed Deletions

- **Running Slope** – Both “grade” and “running slope” are used throughout the guidelines interchangeably. For example, the term “grade” is used in Section 1103.5 when referring to the Pedestrian Access Route, but “running slope” is used in Section 1105.2.3, which refers to crosswalks (which are part of the pedestrian access route). AASHTO recommends removing the term “running slope” from the guidelines and using “grade” consistently, since it is more common among transportation engineers.
- **Superelevation** – AASHTO recommends removing this term from the definitions since it is not used in the draft guidelines. However, if the Access Board includes it, then the definition needs to be clarified to ensure its accuracy: “The increased cross-slope on a roadway curve that assists in counteracting the lateral acceleration imposed on traveling vehicles.”

Areas of Primary Concern

Section 1102.2.2 – Alterations

“Where existing elements or spaces in the public right-of-way are altered, each altered element or space shall comply with the applicable provisions of Chapter 11. EXCEPTION: In alterations, where compliance with applicable provisions is technically infeasible, the alteration shall comply to the maximum extent feasible.”

Background

AASHTO’s major concern with this section of the draft guidelines is that there is no clear definition of an “alteration.” It appears that alterations, and the accessibility improvements that are associated with them, constitute a “sliding scale” where greater alterations will necessitate more substantial accessibility accommodations. While this seems logical, it is very much open to interpretation, which, in AASHTO’s view, means open to litigation. It is unclear what specific types of modifications to the sidewalk, roadway, signals, etc., trigger accessibility improvements, and which improvements are required.

For example, does re-striping the roadway trigger any accessibility improvements? Filling potholes? Conducting underground utility work for significant distances? (Utility work is typically permitted, but not carried out, by the State DOT.) The question of modifications triggering accessibility improvements is also unclear in the area of traffic signal installations. For example, do signal bulb replacements trigger accessibility improvements? Signal re-timing? Signal head replacements/changes? Box hardware improvements? Pole relocation? There are so many different types of “alterations” and so many different interpretations of this term that additional guidance is necessary. To simplify the issue, it might be possible to tie accessibility improvements to standard categories of highway projects, such as “roadway preservation,” “preventative maintenance,” “rehabilitation,” “reconstruction,” etc.

Once the “trigger” has been determined, the next question becomes, “What accessibility improvements should reasonably be expected to be made?” For example, if pavement reconstruction is determined to be a “trigger,” then does this necessitate constructing curb ramps? Widening the sidewalk? Reconstructing parking spaces? Installing accessible pedestrian signals? Depending on the extra cost and time added to the project to accomplish these improvements, which could be substantial depending on the type of project being undertaken, it is possible in such politically driven agencies as state and local transportation departments that a project could be postponed or pushed down the priorities list (due to lack of time and/or funds) in favor of more straight-forward projects that can be accomplished more quickly and easily.

In all such proposed guidance, standard engineering terminology needs to be used to ensure that the requirements of this section are understood and implemented correctly by the transportation agencies. If a concise explanation cannot be developed in the Guidelines that adequately details the varying levels of alteration and their associated requirements/improvements, then additional guidance in this area will be necessary.

Additional concerns of AASHTO surround the interpretation of the phrases “technically infeasible” and “maximum extent feasible.” This terminology does not indicate a level of reasonableness in the construction of accessibility improvements, since almost anything is “technically” feasible. The more likely reason that the accessibility guidelines will not be met is due to significant social, economic, or cost constraints, such as tearing down or altering a building that abuts the existing right-of-way, conflicting with historic preservation issues, etc.

Related to the issue of “maximum extent feasible” is the determination of whether this has been accomplished. Who will make this determination? The US Department of Justice? The US Department of Transportation? If it becomes a self-certification process, how can a State DOT reduce its exposure to unnecessary and very expensive legal challenges? In this case, it would be helpful to State and local governments if a simple format were developed to document these decisions to help lessen the possibility of litigation and to help protect them in legal disputes.

Recommendations

1.) AASHTO proposes working with the Access Board to develop additional guidance related to the definition of “alterations” and the accessibility improvements they trigger, using typical highway construction/engineering terminology to ensure understanding by implementing agencies. Specific examples of alterations and their associated accessibility improvements would be extremely helpful. A “cookbook” type approach would be preferred by the State DOTs to help ensure that they are meeting the guideline and to assist in averting costly legal action by outside groups. Of primary concern is the potential for requiring accessibility improvements in conjunction with routine roadway preservation and preventative maintenance (see proposed definitions). AASHTO recommends exempting these work activities from triggering additional accessibility features.

2.) The phrases “technically infeasible” and “maximum extent feasible” should be removed from the text because they do not accurately portray the conditions surrounding the ability to implement certain guidelines. These terms are open to interpretation and present a very real concern to the DOTs regarding liability. Replacement terms could include “reasonable” or “practicable,” which allow some room for the balancing of competing interests.

An option that should be considered as an alternative to using these terms would be to set a maximum cost limit, as a percentage of the highway construction project, which could be used to determine if an accessibility treatment is an unreasonable expenditure given the size of the project being undertaken. A process such as this would be easy to understand by the highway agencies and would prevent small projects from triggering huge associated investments that could lead to the cancellation of the project.

3.) AASHTO proposes to work cooperatively with the Access Board in the development of an “accessibility design exception” process to be used when it is not reasonable to install certain accessibility features. This process could be based on the existing design exception process that has been used in the transportation engineering field for decades. The process would serve to document and get appropriate sign-offs on the effort to meet the “maximum extent feasible” guideline (or other such replacement guideline) so that these types of decisions are not constantly litigated through the courts. Since the Federal Highway Administration (FHWA) will likely be the agency that adopts and regulates these provisions, it should be the entity to determine if the State DOT did its job “to the maximum extent feasible.”

Section 1102.3 – Alternate Circulation Paths

“An alternate circulation path complying with [Section] 1111 shall be provided whenever the existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions.”

Section 1111.3 – Location [of Alternate Circulation Paths]

“The alternate circulation path shall parallel the disrupted pedestrian access route, on the same side of the street.”

Background

This section of the guidelines calls for the construction of alternate circulation paths when the existing pedestrian access route (i.e., the sidewalk) is temporarily blocked. In addition, this alternate path must be accessible and must be provided on the same side of the street. AASHTO has serious concerns regarding these guidelines related to many different issues, including pedestrian safety, the location of the alternate path, the guideline's application to short-duration projects, the Board's definition of "other temporary conditions," liability exposure of the State DOTs, the apparent prohibition of street closures, and the likely increases in project cost and time. Requiring this provision in every situation will have serious unintended consequences that we feel confident the Access Board would prefer to avoid. AASHTO feels that existing standards found in the MUTCD more effectively address the need and proper consideration for alternate circulation paths.

While it may be preferable to have an alternate circulation path parallel to and on the same side of the street as the disrupted pedestrian access route, this is not always possible, nor is it always advisable. For example, in a situation where construction traffic must cross the same-side alternate circulation path, this guideline puts pedestrians in direct conflict with construction traffic. Thus, in this case, for pedestrian safety reasons, it would be preferable to have the alternate circulation path across the street or at some other location.

In addition to the safety issue, AASHTO feels that there are other considerations that must be addressed when determining where to locate the alternate circulation path. AASHTO interprets these guidelines to require infringements into the roadway (properly shielded) for the alternate circulation path when there are no other reasonable alternatives. However, AASHTO feels that there is a point at which the congestion, delay, and cost to vehicle users due to lane closures would outweigh the need to provide the alternate path on the same side of the street, and would thus warrant this requirement unreasonable (or in the Access Board's terminology, "technically infeasible"). In addition, depending on the extent or type of construction project (such as a utility repair or installation), the alternate path on the "same side of the street" may come very close to crossing the street, so the option should be available to properly close the sidewalk on the "construction side" of the street and utilize the pedestrian access route on the opposite side of the street.

It also appears that there was no consideration given to the length of time that a disruption to the pedestrian access route would occur. Would the design and construction of a properly protected alternate circulation path be required for a disruption of 15 minutes? 2 hours? There is no consideration for what would be reasonable from this standpoint – the guideline states that a same-side alternate circulation path must be constructed in every case. Especially for small, short-duration projects, this guideline would increase costs significantly, as well as increasing the time and effort, both in design and construction, needed to conduct these projects. In addition, there is tremendous concern from the State DOTs that they would be held responsible (and liable) for checking and enforcing accessibility compliance, even if the work being done is performed by another (or private) entity or a local jurisdiction. This would require substantial inspection time, money, and manpower that the DOTs do not have.

In addition to the length of time a disruption occurs, there is also a concern regarding the types of disruptions that could be considered "other temporary conditions." AASHTO understands that accommodations should be made during events such as street fairs, parades, and the like, but this guideline could also be interpreted to include such uncontrollable events as a moving company placing boxes or furniture on the sidewalk, or the accumulation of snow and ice, which strikes such large areas that it prevents any jurisdiction from providing accessible pedestrian facilities in all locations within a specified period of time. These situations need to be exempted from this requirement, or the applicable situations should be specified.

This guideline also appears to prohibit the closure of sidewalks under any circumstance, which could lead to the prevention of *road* closures during construction if they have sidewalks. It might also force the State DOT or local jurisdiction to construct a protected pedestrian path (or paths) through the construction area in the vicinity of the disrupted sidewalks, which could dramatically increase the cost and complexity of staging construction projects, as the contractor would have to work “around” the pedestrian path(s) and relocate it/them when work needs to be done in that area.

As currently written, the guideline conflicts with the existing federal standards for traffic control, contained in the *Manual on Uniform Traffic Control Devices* (MUTCD), which provide for an “alternate route,” but not necessarily paralleling the original route. While this conflict does not indicate which guideline should be changed, AASHTO believes that the MUTCD does a much more effective job of addressing all of the concerns that must be considered in a work zone and, thus, better protects the pedestrian. The MUTCD states that “provisions should be made for persons with disabilities as determined by an engineering study.” The draft guideline in Section 1111.3 essentially takes away the judgment of the engineer, who is responsible not only to oversee projects, but also to provide for the safe and efficient mobility needs of all citizens. In addition, the MUTCD accounts for many situations that the current guideline does not effectively address, such as pedestrian conflicts with work site vehicles, as noted in the excerpt below:

There are three considerations in planning for pedestrians in temporary traffic control zones:

- A. Pedestrians should not be led into conflicts with work site vehicles, equipment, and operations.*
- B. Pedestrians should not be led into conflicts with vehicles moving through or around the work site.*
- C. Pedestrians should be provided with a safe, convenient path that replicates as nearly as possible the most desirable characteristics of the existing sidewalk(s) or a footpath(s).*

Consideration should be made to separate pedestrian movements from other work site activity and motor vehicle traffic. Pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high motor vehicle traffic volumes, these signs should be placed at intersections so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

...Whenever it is feasible, closing off the work site from pedestrian intrusion may be preferable to channelizing pedestrian traffic along the site with temporary traffic control devices....

From *Manual on Uniform Traffic Control Devices*, FHWA, 2001, Section 6D-01

In addition to conflicts with the MUTCD, the guideline also appears to conflict with the current Code of Federal Regulations (28 CFR 36.211, “Maintenance of accessible features”) regarding the allowance for temporary closures, which states:

- a) A public accommodation shall maintain in operable working condition those features of facilities and equipment that are required to be readily accessible to and usable by persons with disabilities by the Act or this part.*
- b) This section does not prohibit isolated or temporary interruptions in service or access due to maintenance or repairs.*

However, the phrase “temporary interruptions” is not well defined or explained, which leaves it open to interpretation.

Recommendations

AASHTO recommends using the language found in Section 6D-1 of the MUTCD, discussed previously, as the guideline for considering all issues related to alternate circulation paths.

However, if this language is not acceptable, then AASHTO strongly recommends providing reasonable alternatives for locating alternate circulation paths when same-side-of-street routes or routes through construction work zones are cost prohibitive, would involve significant safety concerns to pedestrians or motor vehicle occupants, or are otherwise ill-advised.

AASHTO also recommends that a minimum time period for access route closure be specified for which the construction of an alternate circulation path would be required, such as “closures that last for a period of 24 hours or greater” or “closures which last overnight.” In addition, AASHTO recommends including an exemption from this guideline for full street closures, as these are sometimes needed for safe and efficient construction.

Finally, AASHTO recommends including an exemption for uncontrollable occurrences, such as snow and ice accumulation, from the list of “other temporary conditions.” For example, the guideline could read, “...or other temporary conditions over which the local jurisdiction has control.”

Section 1103.4 – Cross Slope [of the Pedestrian Access Route]

“The cross slope of the pedestrian access route shall be 1:48 maximum.”

Section 1105.2.2 – Cross Slope [of Crosswalks]

“The cross slope shall be 1:48 maximum measured perpendicular to the direction of pedestrian travel. EXCEPTION: This requirement shall not apply to mid-block crossings.”

Background

This provision was included in the draft guidelines to assist manual wheelchair users in negotiating the pedestrian access route. Facilities with greater cross-slopes are difficult to traverse due to the natural tendency of the wheelchair to follow the downhill slope; thus, the wheelchair user must constantly correct for this occurrence, which greatly increases the level of exertion required.

As discussed in Section 1103.2 of the draft guidelines, crosswalks (in addition to sidewalks, ramps, and other features) are considered part of the pedestrian access route, to which this stipulation applies. (Note: mid-block crossings, including crosswalks and perpendicular ramps, are exempt from this requirement per Sections 1104.2.1.2 and 1105.2.2.) Thus, crosswalks across hilly roads will need to be “tabled” or flattened out to achieve the required two percent cross slope. AASHTO is extremely concerned about the implications of this requirement, which are extensive and far reaching.

The treatments used to achieve the required cross slope on crosswalks may not conform to existing highway design and construction standards, which puts the State DOTs at risk for lawsuits. Currently, many governmental entities have a liability defense when a public project is designed in accordance with prevailing design standards. Deviating from these design standards to accommodate a requirement on cross-slope – a requirement whose safety implications have not been studied – will result in a loss of a defense regarding the design of the roadway. Design exceptions, which are needed whenever roadway designs differ from existing standards, would be needed in many cases in order to construct these “tabled”

crosswalks and intersections. These design exceptions would have to be defensible in court from a motor vehicle safety perspective.

In addition, tabling the crosswalk or intersection could require adjustments in the vertical alignment of the roadway well beyond the intersection which, depending on the road's design speed, may be significant. These adjustments could lead to significant costs to redesign and reconstruct existing intersections, including the relocation of drainage features, raising/lowering adjacent sidewalks, relocating or modifying underground and adjacent above-ground utilities, and constructing retaining walls. Street elevations may end up being different from the adjacent sidewalk elevations, which poses additional pedestrian access constraints. In addition, in many cases the roadway and associated sidewalk will have to steepened on either side of the intersection to accommodate the flattened intersection. For these reasons, at a minimum, existing intersections should be exempted from this provision. If this requirement is retained, it should apply only to new construction at a new location.

Tabling crosswalks or intersections may also have unintended negative impacts on the control and safety of motor vehicles and their occupants, as well as comfort issues for those with spinal cord injuries. These concerns are heightened for emergency vehicles. Loss of control of vehicles in urban areas could have tremendous safety implications for pedestrians alongside the roadway. In addition, maintenance costs for motor vehicle users are likely to be higher, and could be significant, as a result of tabling and other remediations. Tabling could also be of concern to bicyclists and motorcyclists, depending on how they are designed/constructed. For these reasons, AASHTO believes that this guideline needs modification, even for new construction.

Finally, as mentioned in the discussion of alterations, an "accessibility design exception" process is needed to determine when the "maximum extent feasible" has been achieved and to help minimize the number of costly legal challenges.

Recommendations

AASHTO proposes tying the implementation of this guideline to the existing topography in the project area. The guideline should state that the cross slope of a crosswalk should be the minimum possible while still providing a roadway design that meets accepted roadway design criteria. While the accommodation of disabled pedestrians is of immense importance, there are many other factors that must be considered in any given intersection design. The current draft guideline serves to take away the judgment of the engineer to provide a roadway facility that is safe and functional for all users. In some cases, as detailed above, "tabling" the intersection will have many unintended negative impacts.

If the above proposal is unacceptable, AASHTO proposes to work with the Access Board on the development of design examples to better assess the potential impacts of "tabling" on the existing roadway network. These impacts include, but are not limited to, construction costs, safety of pedestrians and motor vehicle occupants, accessibility of adjacent parts of the pedestrian access routes, and vehicle user costs.

Section 1103.8 – Changes in Level [in Pedestrian Access Routes]

"Changes in level shall comply with [Section] 303. Changes in level shall be separated horizontally 30 inches (760 mm) minimum. EXCEPTION: The horizontal separation requirement shall not apply to detectable warnings."

Background

Though this section refers to an existing section of ADAAG for the definition of "changes in level," it is still a major concern for the State DOTs with regard to long-term maintenance.

This guideline refers to ADAAG Section 303, “Changes in Level,” which allows for a maximum vertical change in level of ¼ inch (or ½ inch with a bevel). Though this level of precision is likely to be attainable in new construction (though the metric equivalents, 6.4 mm and 13 mm, are more problematic due to construction tolerances), it would be very difficult to maintain a ¼-inch maximum vertical change along all portions of the pedestrian access route for the life of the facility. The level of inspection and maintenance effort required to stay within these guidelines, including both manpower commitments and monetary costs, would be a great burden for the State DOTs, as well as for local transportation and public works departments. How often would inspection be required? Monthly? Semiannually? Yearly? And would every crack greater than ¼ inch require immediate repair?

In addition to the level of effort, time, and cost required, there would be severe liability issues for State DOTs and local jurisdictions in attempting to maintain facilities to the exacting requirements stated in this guideline. Every crack or separation with a vertical height greater than ¼ inch on a sidewalk would be a potential lawsuit. This size crack, unfortunately, is very common and is almost impossible to prevent. Facilities in the public right-of-way, such as sidewalks, are not constructed to the same tight standards as large commercial office buildings – to do so would increase costs significantly. In addition, sidewalks and crosswalks are subjected to external forces, such as tree roots, heavy vehicles, and snow removal equipment, that contribute to their deterioration and with which buildings do not have to contend. Thus, the construction tolerances for indoor, architect-designed structures are not transferable to these facilities.

Recommendations

AASHTO has recently funded a research study through the NCHRP program to look into appropriate construction tolerances for the facilities discussed in these guidelines and recommends that the Access Board “reserve” this section until the project is complete, which should be in Summer 2003. In addition, AASHTO proposes working with the Access Board to determine appropriate and achievable monitoring systems for these issues, including such things as reasonable monitoring cycles and response times for needed corrections.

Section 1104.2 – Types [of Curb Ramps and Blended Transitions]

“Perpendicular curb ramps shall comply with [Sections] 1104.2.1 and 1104.3; parallel curb ramps shall comply with [Sections] 1104.2.2 and 1104.3; blended transitions shall comply with [Sections] 1104.2.3 and 1104.3.”

Background

AASHTO assumes that the Access Board, by omission, is proposing to disallow diagonal ramps. This restriction would be problematic for many State DOTs that routinely use these features effectively. It is common practice to use diagonal ramps in certain situations and, in fact, it is required by law in at least one state. While it is true that diagonal ramps lack certain characteristics that are helpful to the blind community, such as directionality, they also have characteristics that are advantageous in other situations. Disallowing diagonal ramps limits the options of a design engineer for use in locations where they may be appropriate.

For example, at intersections with large curb radii, it is difficult to place curb ramps within the extended lines of the sidewalk. To maintain a perpendicular transition from the ramp to the roadway at these locations, as required in Section 1104.2.1, the ramp must be placed outside the curb return. This necessitates locating the crosswalk farther from the intersection, which has safety and visibility implications for both pedestrians and vehicles. The *Building a True Community* report developed by the Public Rights-of-Way Access Advisory Committee (PROWAAC) included many cases where the construction of diagonal ramps is necessitated by the intersection geometry, so it is unclear why the Access Board chose to disallow them.

In addition to the issues associated with new construction, there are also questions regarding how to handle existing diagonal ramps. Does the omission of diagonal ramps from this guideline require replacing them with parallel or perpendicular curb ramps when an alteration is being done in the intersection? If this is required, what level of alteration triggers the requirement to replace the diagonal ramp?

Recommendations

AASHTO recommends including diagonal ramps in the guidelines as an acceptable option for use in appropriate situations.

Sections 1105.6, 1105.6.1, and 1105.6.2 – Roundabouts, including Separation and Signals

Section 1105.6 – Roundabouts: “Where pedestrian crosswalks and pedestrian facilities are provided at roundabouts, they shall comply with [Section] 1105.6.”

Section 1105.6.1 – Separation [at Roundabouts]: “Continuous barriers shall be provided along the street side of the sidewalk where pedestrian crossing is prohibited. Where railings are used, they shall have a bottom rail 15 inches (380 mm) maximum above the pedestrian access route.”

Section 1105.6.2 – Signals [at Roundabouts]: “A pedestrian activated traffic signal complying with [Section] 1106 shall be provided for each segment of the crosswalk, including the splitter island. Signals shall clearly identify which crosswalk segment the signal serves.”

Background

These sections have significant implications for the future operation of roundabouts, and AASHTO is seriously concerned that these guidelines will effectively negate the advantages that their expanded implementation could provide in the United States. Based on extensive positive experiences in European countries, roundabouts are being introduced in projects throughout the nation because they provide many advantages over traditional stop-controlled intersections: 1) they reduce delay (and increase vehicle throughput) by slowing traffic at the intersection through the use of visual cues and turning movements without stopping it; 2) because of this reduction in speed, they reduce the severity of intersection crashes that occur when stop signs are missed or disregarded; and 3) they aid in improving air quality by reducing the number of vehicle stops.

The phrase “continuous barriers” implies roadside hardware, such as steel guardrail or concrete traffic barriers, to the traffic engineering community. With respect to the separation of pedestrians from traffic at roundabouts, AASHTO feels that constructing barriers such as these around roundabouts may actually decrease safety for drivers and could even trap misdirected blind pedestrians within the roundabout. In addition, the use of standard roadway barriers at intersections is undesirable due to their height and the resulting impact on sight distance available to drivers. Design engineers strive to ensure that there are no obstructions between 2 feet and 7 feet above the pavement, which are the general guidelines for maximizing sight distance. Before these issues can be resolved, however, the term “barrier” needs to be clarified (see previous comments on barriers in “Definitions” section). If a barrier can include a planting strip, raised lip, or other more practical features, then this issue can be more easily resolved.

As for signalization, it should be noted that the stopping of traffic is contrary to the philosophy of roundabouts and will defeat the purpose of constructing them. In addition to this, signaling each intersection in the roundabout will be costly due to the sheer number of installations that would be needed, as well as dangerous to both drivers and pedestrians. Drivers are less likely to expect a traffic signal within a roundabout and may not react to it in time for safe pedestrian crossings. In addition, given the tight geometrics of the typical roundabout, placing the necessary signals in locations where they can

be seen and where they will be easily understood as regulating traffic on a given portion of the roundabout will be extremely difficult. It is likely that these signals will give the pedestrian a false sense of safety when stepping out onto the roadway. Drivers are also unlikely to expect a queue within the roundabout, which will likely result in increased rear-end crashes and, potentially, subsequent impacts with pedestrians.

Recommendations

AASHTO recommends “reserving” Sections 1105.6 through 1105.6.2 until NCHRP Project 3-65, *Applying Roundabouts in the United States*, is complete, which is anticipated in June 2005. This \$700,000 study, which is just getting underway, will investigate and propose recommendations for the safety and operation of roundabouts, including “the effects of different design configurations on the safety of bicycles and pedestrians, particularly pedestrians with disabilities.” Because of the concerns this section of the guidelines has raised within the transportation community, AASHTO will be seeking additional funding for this project to both accelerate the study as well as to look more comprehensively at pedestrian accessibility issues.

After completion of this study, AASHTO recommends developing a joint working group with the Access Board, including experts from the traffic engineering, roadway design, and operations disciplines, to find mutually beneficial solutions to provide for safe and accessible pedestrian movements at roundabouts.

Section 1105.2.1 – Width [of Crosswalks]

“Marked crosswalks shall be 96 inches (2440 mm) wide minimum.”

Background

The current edition of the MUTCD requires a 72-inch minimum crosswalk width, while the draft guidelines require an extra two feet in all cases. This requirement for a 96-inch crosswalk does not appear to be driven by accessibility needs. While major metropolitan areas may need extra width in their crosswalks to handle large platoons of pedestrians, the decision to provide extra width should be made by considering relevant factors at a specific location and should not be mandated here.

Eight-foot wide crosswalks are excessive in many small rural towns where few pedestrians are present. In addition, the additional 24 inches in width will further exacerbate the difficulty of constructing crosswalks with a maximum 2% cross slope, especially in hilly terrain. Finally, this guideline places vehicles two feet farther back from the intersection, which could have sight distance implications for drivers.

Recommendations

AASHTO recommends that these guidelines remain consistent with the MUTCD, retaining the 72-inch minimum crosswalk width.

Section 1105.3 – Pedestrian Signal Phase Timing

“All pedestrian signal phase timing shall be calculated using a pedestrian walk speed of 3.0 feet per second (0.91 m/s) maximum. The total crosswalk distance used in calculating pedestrian signal phase timing shall include the entire length of the crosswalk plus the length of the curb ramp.”

Background

AASHTO is very concerned about this guideline, as the slower crossing speeds and longer distance for calculating the traffic signal timing will have a significant effect on traffic flow, especially in major

metropolitan areas where congestion is already heavy. This guideline will slow the walking speed down by 25% (from 4 feet per second (fps) to 3 fps) and increase the calculated walking distance by anywhere from 15% (from 66 feet to 76 feet on a 6-lane roadway) to 55% (from 18 feet to 28 feet on a two-lane roadway).

The MUTCD, which contains the current federal standards for traffic signal timing, has widely accepted criteria for walking speeds and distances. Current guidelines in the MUTCD recommend the use of 4 fps, with slower speeds to be used when conditions indicate a slower speed is appropriate. In addition, the minimum distance to be used for calculating pedestrian signal phase timing is from the curb on one side of the street to the center of the farthest traveled lane on the opposite side, or to a median of sufficient width for pedestrians to wait.

The current design criteria allow the designer the flexibility to tailor the timing design of each intersection. Decreasing the walk speed at all intersections to a maximum of 3 fps will increase the duration of the signal phases that have a pedestrian component. This change will either increase the cycle length or require an inequitable split of the existing cycle. The end result will be increased delay and congestion.

The increased distance required for calculating the pedestrian signal timing, due to the inclusion of the ramp distance, will further exacerbate the impact of this guideline. The extra distance could add a minimum of 10 feet to the crossed length. This increased distance will decrease the duration of the “green time” for vehicles and/or increase the cycle length. Also, the guideline is not clear whether the length of one or both curb ramps is to be used in calculating the crossing time, which could further increase the distance and delay.

This guideline will especially have impacts on arterial highways and other corridors with coordinated traffic signals that are used to keep traffic moving smoothly through multiple intersections. The changes proposed in this guideline could throw off timing and traffic progression in these corridors – which is critical for keeping traffic flowing smoothly – and potentially throw them into gridlock. It would be a massive effort to re-time these crucial corridors. In addition, any increase in delay at traffic signals will diminish the efforts of state and local governments to improve air quality, which is greatly affected by stop-and-go traffic, as required by the Clean Air Act.

Using the current MUTCD guidelines, the designer has the option to use the slower speed and longer distance when conditions warrant. The designer also has the opportunity to specify a pedestrian signal button that can be used to request a longer crossing time when needed, such as with an extended button push or other mechanism. A solution such as this would have far fewer impacts on the flow of traffic and would serve to provide accessibility and mobility for all citizens at a reasonable cost.

Recommendations

AASHTO recommends maintaining the design criteria for traffic signals as defined in the MUTCD. Language can be added regarding when a slower walk speed or longer distance would be appropriate for an intersection, and/or the appropriate application of push-buttons to select an extended crossing time.

Section 1105.5.3 – Approach [for Pedestrian Crossings]

“Where the approach exceeds 1:20, the approach shall be a ramp 48 inches (1220 mm) minimum in width and shall comply with [Section] 405. Where the rise of a ramped approach exceeds 60 inches (1525 mm), an elevator complying with [Section] 407, or a limited-use/limited-application elevator complying with [Section] 408 shall be provided.”

Background

The current ADAAG (Section 405.6) has established a maximum rise of 30 inches for any single ramp run. Multiple ramp runs can be used with appropriate landings (Section 405.7) between these runs. The new guidelines will require an elevator for any rise greater than 60 inches, regardless of the number of ramps or runs provided.

AASHTO is extremely concerned about the ramifications of this guideline on existing pedestrian routes at grade-separated interchanges and bridges, since it will essentially require elevators to connect all routes between the upper and lower roadways. It will also have major cost implications for new grade separation projects, which have benefits for pedestrians such as removing at-grade crossings and allowing the direct crossing of major facilities such as freeways without having to divert to adjacent interchanges. These increased costs may lead to a decreased use of pedestrian over/underpasses. It could also lead to a decreased use of sidewalks on the upper portions of grade-separated roadways, since these will necessitate the addition of elevators. It will also likely limit the installation of new pedestrian facilities if they are not currently present at over/underpass locations.

Elevators, in addition to significantly increasing design and construction costs, will cause an increase in maintenance needs and operating costs. There are also security concerns, as they would require increased monitoring by police or other security patrols to ensure that they do not become a haven for thieves, drug addicts, or the homeless. Also, it seems possible that stairs and/or ramps would still be required at these locations to ensure continuous access in the event that the elevators are inoperative. In addition, it is not clear whether each pedestrian route at an overpass or underpass would require an elevator. For example, if a four-legged intersection is replaced with an overpass, would four elevators be required so that no road crossings are required? Finally, due to the high installation and maintenance costs of elevators, it is extremely important to define the level of alteration that would require their installation at existing locations.

Recommendations

AASHTO recommends allowing for alternate solutions, such as innovative ramp and landing designs that could reduce the impact of the rise to the pedestrian, or other reasonable mechanical means for providing accessibility. Elevators could be options for the designer in areas with high pedestrian volumes or other conditions that would warrant them, but should not be mandated as the only solution for elevation changes of five feet or more.

Section 1105.7 – Turn Lanes at Intersections

“Where pedestrian crosswalks are provided at right or left turn slip lanes, a pedestrian activated traffic signal complying with [Section] 1106 shall be provided for each segment of the pedestrian crosswalk, including at the channelizing island.”

Background

Similar to the proposal to signalize roundabouts, AASHTO is extremely concerned about the ramifications of installing traffic signals at free-flow turn lanes. Signalizing these locations may actually decrease the safety of pedestrians and vehicles for many of the same reasons mentioned in the comments on signals in roundabouts. The installation of a traffic signal, or any type of traffic control, is typically the result of an extensive traffic engineering study that determines whether such a device is warranted and in the community’s best interest. The MUTCD, which provides guidance for determining when signals are warranted, is based on years of experience and its guidance is familiar to the general public. Drivers do not expect to find a traffic signal at a slip lane and may not react to it in time for safe pedestrian crossings, especially if it is only occasionally activated. It is also likely that these signals will give the pedestrian a false sense of safety when stepping out onto the roadway. When activated sporadically, it

will likely result in increased rear-end crashes and, potentially, subsequent impacts with pedestrians. A regulation such as this guideline, which throws out or ignores existing traffic engineering knowledge and regulations, should not be implemented.

In addition, signals are likely to have significant operational impacts on slip lanes – lowering traffic throughput in these locations – and will effectively negate the advantages they provide at high traffic volume intersections. It should be noted that any increase in delay at traffic signals will diminish efforts by state and local governments to improve air quality as required by the Clean Air Act. Furthermore, it is unclear whether this guideline is also intended to be applied to slip lanes at unsignalized intersections, which would contribute to even more confusion and potential danger for drivers and pedestrians alike. Overall, traffic signals should only be installed after a traffic engineering study has been conducted that indicates that a traffic signal is warranted.

Currently, NCHRP is embarking on two research studies related to this guideline. The first study is NCHRP Project 3-72, *Lane Widths, Channelized Right Turns, and Right Turn Deceleration Lanes in Urban and Suburban Areas*. As the name implies, the primary objective of the study is to develop design guidance or criteria addressing the safety and operational trade-offs of motorists, pedestrians, and bicyclists in three specific situations: selecting lane widths, channelizing right turns, and using right-turn deceleration lanes at driveways and unsignalized intersections. The study will focus on urban and suburban arterial highways with speeds of 45 miles per hour or less. In addition, the study will consider the needs of a full range of pedestrian ages and visual, as well as other, impairments. The output will include recommended language for the AASHTO “Green Book,” the forthcoming AASHTO Pedestrian Guide, the AASHTO Bicycle Facilities Guide, the MUTCD, and the Traffic Control Devices Handbook. Proposals for this 2-year, \$450,000 study are due in December 2002.

The second NCHRP study related to this guideline is Project 3-71, *Innovative Pedestrian Treatments at Unsignalized Crossings*. This project, funded at \$550,000, will identify and study enhanced pedestrian treatments that are currently being used at unsignalized locations across the country to determine which ones are effective. Treatments to be studied include Yield to Pedestrian signs, in-roadway crosswalk lighting, median refuge islands, placement of an advance yield line at mid-block crosswalks, and overhead supplemental devices.

In addition, the National Institutes of Health are embarking on a study of pedestrian issues that should include information right-turn lanes.

Recommendations

AASHTO recommends "reserving" Section 1105.7, "Turn Lanes at Intersections," until further research can be conducted. AASHTO proposes working with the Access Board to develop alternative solutions for this issue when this research is complete.

Section 1106.1 – General [Accessible Pedestrian Signal Systems]

“Pedestrian signal systems shall comply with [Section] 1106.”

Background

Section 1106 will require the installation of Accessible Pedestrian Signal (APS) systems at all existing signalized intersections with pedestrian indications. This will be a major cost item for State DOTs and local municipalities.

The added complexity of the systems will increase installation time and cost, as well as maintenance needs. In addition, the greater complexity of these systems will likely increase maintenance and down-

time and make the system less user friendly. The increased number of components required for APS systems also makes the placement of the devices more difficult.

AASHTO supports the concept of providing APS systems to deliver consistent and unambiguous information to assist in the safe and efficient pedestrian crossing of an intersection, but believes that additional research is required. In support of this, the National Cooperative Highway Research Program has an ongoing project – NCHRP Project 3-62, *Guidelines for Accessible Pedestrian Signals* – that is expected to be completed in October 2004. This research project will develop guidelines and training materials for use by the State DOTs in implementing accessible pedestrian signals.

Recommendations

AASHTO recommends “reserving” Section 1106 until further research is conducted, or at least until the current NCHRP project on APS systems is complete to ensure a logical and comprehensive approach to installing these devices.

AASHTO Comments and Recommendations on the Draft Guidelines for Accessible Public Rights-of-Way Line-by-Line Review

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1101 Application and Administration			
1101.1	General.	For the purposes of these requirements, the terms listed in section 1101.3 shall have the indicated meaning.	
1101.2	Referenced Standards.		
1101.2.1	MUTCD.	Copies of the referenced standards may be obtained on-line from the Federal Highway Administration at http://mutcd.fhwa.dot.gov . MUTCD 2000-Millennium Edition Manual on Uniform Traffic Control Devices.	
1101.3	Defined Terms.		
	Accessible Pedestrian Signal.	A device that communicates information about the pedestrian WALK phase in non-visual format.	<i>See discussion and recommendations in Definitions Section.</i>
	Accessible Route.	A continuous, unobstructed path that complies with Chapter 4.	
	Channelizing Island.	Curbed or painted area outside the vehicular path that is provided to separate and direct traffic movement, which also may serve as a refuge for pedestrians.	
	Cross Slope.	The slope that is perpendicular to the direction of travel. This is usually called superelevation on curves in the public right-of-way (see superelevation).	<i>See discussion and recommendations in Definitions Section.</i>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
	Crosswalk.	That part of a roadway at an intersection that is included within the extensions of the lateral lines of the sidewalks on opposite sides of the roadway, measured from the curblines or, in the absence of curbs, from the edges of the roadway or, in the absence of a sidewalk on one side of the roadway, the part of the roadway included within the extension of the lateral lines of the sidewalk at right angles to the centerline. Also, any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing by lines or other markings on the surface.	
	Curb Line.	A line at the face of the curb that marks the transition between the sidewalk and the gutter or roadway.	
	Curb Ramp.	A ramp cutting through a curb or built up to it.	
	Detectable Warning.	A surface feature built in or applied to walking surfaces or other elements to warn of hazards on a circulation path.	
	Dynamic Envelope.	The clearance required for a rail vehicle and its cargo overhang due to any combination of loading, lateral motion, or suspension failure.	
	Element.	An architectural or mechanical component of a building, facility, space, site or public right-of-way.	
	Facility.	All or any portion of buildings, structures, improvements, elements and pedestrian or vehicular routes located on a site or in a public right-of-way.	
	Grade.	(See running slope).	
	Grade Break.	The meeting line of two adjacent surfaces of different slope (grade).	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
	Locator Tone.	A repeating sound that identifies the location of the pedestrian push button.	
	Pedestrian Access Route.	An accessible corridor for pedestrian use within the public right-of-way.	<i>See discussion and recommendations in Definitions Section.</i>
	Public Right-of-Way.	Land or property, usually in a corridor, that is acquired for or devoted to transportation purposes.	
	Roundabout.	A circular intersection that has yield control of entering traffic, channelized approaches, counterclockwise circulation, and appropriate geometric curvature to limit travel speeds on the circulatory roadway.	
	Running Slope.	The slope that is parallel to the direction of travel expressed as a ratio of rise to run. In the public right-of-way, this is usually called grade, and is expressed in percent.	
	Sidewalk.	That portion of a public right-of-way between the curb line or lateral line of a roadway and the adjacent property line that is improved for use by pedestrians.	
	Splitter Island.	A flush or raised island that separates entering and exiting traffic in a roundabout.	
	Street Furniture.	Elements in the public right-of-way that are intended for use by pedestrians.	
	Superelevation.	Cross slope on a curve in the roadway (see cross slope).	<i>See discussion and recommendations in Definitions Section.</i>
	Walk Interval.	That phase of a traffic signal cycle during which the pedestrian is to begin crossing, typically indicated by a WALK message or the walking person symbol and its audible equivalent.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1102 Scoping Requirements			
1102.1	General.	All areas of newly designed and newly constructed facilities in public rights-of-way and altered portions of existing facilities in public rights-of-way shall comply with Chapter 11.	<i>See discussion of and recommendations for Section 1102.2.2, Alterations, in Areas of Primary Concern section.</i>
1102.2	Existing Public Rights-of-Way.	Additions to existing public rights-of-way shall comply with 1102.2.1. Alterations to existing public rights-of-way shall comply with 1102.2.2.	<i>See discussion of and recommendations for Section 1102.2.2, Alterations, in Areas of Primary Concern section.</i>
1102.2.1	Additions.	Each addition to an existing public right-of-way shall comply with the applicable provisions of Chapter 11. Where the addition connects with existing construction, the connection shall comply with 1102.2.2.	Comments: Need clarification regarding how accessible facilities “connect” to existing construction. Does the "connection" refer only to the sidewalk, or does it include the pedestrian signals and/or other features? Recommendations: Recommend clarification of the types of treatments necessary when "connecting" with existing construction.
1102.2.2	Alterations.	Where existing elements or spaces in the public right-of-way are altered, each altered element or space shall comply with the applicable provisions of Chapter 11. EXCEPTION: In alterations, where compliance with applicable provisions is technically infeasible, the alteration shall comply to the maximum extent feasible.	<i>See discussion of and recommendations for Section 1102.2.2, Alterations, in Areas of Primary Concern section.</i>
1102.2.2.1	Extent of Application.	An alteration of an existing element, space, or area of a public right-of-way shall not impose a requirement for accessibility greater than required for new construction.	
1102.2.2.2	Prohibited Reduction in Access.	An alteration that decreases or has the effect of decreasing the accessibility of a public right-of-way or site arrival points to buildings or facilities adjacent to the altered portion of the public right-of-way, below the requirements for new construction at the time of the alteration is prohibited.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1102.3	Alternate Circulation Path.	An alternate circulation path complying with 1111 shall be provided whenever the existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions.	<i>See discussion of and recommendations for Sections 1102.3, Alternate Circulation Path, and 1111.3, Location [of Alternate Circulation Paths], in Areas of Primary Concern section.</i>
1102.4	Sidewalks.	Where sidewalks are provided, they shall contain a continuous pedestrian access route complying with 1103. The pedestrian access route shall connect to elements required to comply with Chapter 11.	
1102.5	Protruding Objects.	Protruding objects on sidewalks and other pedestrian circulation paths shall comply with 1102.5 and shall not reduce the clear width required for pedestrian accessible routes.	
1102.5.1	Protrusion Limits.	Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. EXCEPTION: Handrails shall be permitted to protrude 4-1/2 inches (115 mm) maximum.	Comments: Some safety features within the right-of-way, such as fire hydrants, may not adhere to the protrusion requirements.
1102.5.2	Post-Mounted Objects.	Free-standing objects mounted on posts or pylons shall overhang circulation paths 4 inches (100 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground. EXCEPTION: This requirement shall not apply to sloping portions of handrails serving stairs and ramps.	Comments: 1.) The existing ADAAG (Section 307.3) allows a 12-inch maximum overhang of post-mounted objects into the circulation path; thus, the 4-inch requirement in the draft guidelines is a significant restriction. 2.) Some features required in other sections of the guidelines, such as the street name requirement on Accessible Pedestrian Signal poles, may not meet these protrusion requirements.

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1102.5.3	Reduced Vertical Clearance.	Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground. EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.	
1102.6	Curb Ramps and Blended Transitions.	A curb ramp or blended transition complying with 1104, or a combination of curb ramps and blended transitions, shall connect the pedestrian access routes to each street crossing within the width of each crosswalk.	Comments: The placement recommendations for curb ramps could increase construction costs, but the impact is expected to be minimal.
1102.7	Pedestrian Signs.	Signs for pedestrian use shall comply with 1102.7.	
1102.7.1	Bus Route Identification.	Bus route identification signs shall comply with 703.5.1 through 703.5.4, and 703.5.7 and 703.5.8. In addition, to the maximum extent practicable, bus route identification signs shall comply with 703.5.5. Bus route identification signs located at bus shelters shall provide raised and Braille characters complying with 703.2, and shall have rounded corners. EXCEPTIONS 1: Bus schedules, timetables and maps that are posted at the bus stop or bus shelter shall not be required to comply with 1102.7. 2: Signs shall not be required to comply with 703.2 where audible signs are user- or proximity-actuated or are remotely transmitted to a portable receiver carried by an individual.	
1102.7.2	Informational Signs and Warning Signs.	Informational signs and warning signs shall comply with 703.5.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1102.8	Pedestrian Crossings.	Where a pedestrian crossing is provided, it shall comply with the applicable provisions of 1105. Where pedestrian signals are provided at a pedestrian crossing, they shall comply with 1106.	<i>See comments and recommendations in Sections 1105 and 1106.</i>
1102.9	Street Furniture.	Street furniture that is intended for use by pedestrians and installed on or adjacent to a sidewalk shall comply with 309 and 1107.	<i>See comments and recommendations in Section 1107.</i>
1102.10	Stairs.	Where provided, stairs shall comply with 504. Stair treads shall have a 2 inch (51 mm) wide strip of color contrasting with the tread and riser, the full width of the front edge of each tread.	Comments: There is a possibility of maintenance concerns and increased costs with the high visual contrast strip requirement, but this is anticipated to be a minimal impact.
1102.11	Handrails.	Where provided, handrails shall comply with 505.	
1102.12	Vertical Access.	Where provided elevators shall comply with 407, limited-use/limited-application elevators shall comply with 408, and platform lifts shall comply with 410. Vertical access shall remain unlocked during the operating hours of the facility served.	
1102.13	Bus Stops.	Bus boarding and alighting areas shall comply with 810.2. Bus shelters shall comply with 810.3.	<p>Comments: The bus stop pads and shelter requirements should have minimal impact to state and transit agencies because requirements are similar to previous editions.</p> <p>Recommendations: For clarification purposes, recommend repeating language from ADAAG Section 810.3 in Section 1102.13 (instead of referring to it), then refer to Section 1103.</p>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1102.14	On-Street Parking.	Where on-street parking is provided, at least one accessible on-street parking space shall be located on each block face and shall comply with 1109.	<p>Comments: 1.) While this guideline attempts to propose a simple way to determine the number of accessible parking spaces in public rights-of-way, it has several unintended impacts that need to be addressed. In particular, in urban areas this provision may create a significantly higher proportion of accessible spaces than intended by the Access Board on smaller blocks (based on their commentary), due to existing restrictions, such as driveways, fire hydrants, setbacks from corners, etc. In general, one space per block face will result in a significant increase in the number of spaces as compared to ADAAG Section 208 and Table 208.2. 2.) If an entire block has parking spaces of the same dimension as an accessible space, do certain spaces need to be restricted for use as accessible spaces? 3.) Challenges are anticipated with drainage needs. <i>See additional comments in Section 1109.</i></p> <p>Recommendations: 1.) Recommend a combination of wording for accessible parking spaces of existing ADAAG and proposed guideline: "1 accessible space per 25 spaces, not to exceed 1 accessible space per block face."</p>
1102.15	Passenger Loading Zones.	Where passenger loading zones are provided, they shall connect to a pedestrian access route and shall provide a minimum of one passenger loading zone in every continuous 100 linear feet (30 m) of loading zone space, or fraction thereof, complying with 302, 503.2, 503.3, and 503.5.	Comments: Anticipated impacts are expected to be minimal.
1102.16	Call Boxes.	Where provided, call boxes shall comply with 1110.	
1103 Pedestrian Access Route			
1103.1	General.	Pedestrian access routes shall connect to elements required to be accessible and shall comply with 1103.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1103.2	Components.	Pedestrian access routes shall consist of one or more of the following components: walking surfaces, ramps, curb ramps, blended transitions, crosswalks, pedestrian overpasses and underpasses, elevators, and platform lifts. All components of a pedestrian access route shall comply with the applicable portions of this chapter.	
1103.3	Clear Width.	The minimum clear width of a pedestrian access route shall be 48 inches (1220 mm), exclusive of the width of the curb.	<p>Comments: Increasing the typical sidewalk width from 3 feet to 4 feet will result in increased costs due to increased paving and, occasionally, the need for additional right-of-way.</p> <p>Recommendations: 1.) Recommend allowing a reduction in the clear width of the accessible pedestrian route to 32" for short distances, similar to existing ADAAG section 403.5.1</p>
1103.4	Cross Slope.	The cross slope of the pedestrian access route shall be 1:48 maximum.	<i>See discussion of and recommendations for Sections 1103.4, Cross Slope [of the Pedestrian Access Route], and 1105.2.2, Cross Slope [of Crosswalks], in Areas of Primary Concern section.</i>
1103.5	Grade.	The grade of the pedestrian access route within a sidewalk shall not exceed the grade established for the adjacent roadway. EXCEPTION: The running slope of a pedestrian access route shall be permitted to be steeper than the grade of the adjacent roadway, provided that the pedestrian access route is less than 1:20, or complies with 405.	<p>Comments: Tying the allowable grade for the pedestrian access route to the roadway conditions is an improvement over the existing ADAAG guidelines, which state that a running slope can not be steeper than 1V:30H. However, ramps need to be exempted from this guideline, since a ramp parallel to a downhill section of roadway may exceed the roadway grade.</p> <p>Recommendations: Recommend exempting ramps from this requirement. Also recommend that the sidewalks be allowed to exceed the roadway grades when necessary to tie into the level landing at the top of a perpendicular ramp.</p>
1103.6	Surfaces.	The surfaces of the pedestrian access route shall comply with 302.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1103.7	Surface Gaps at Rail Crossings.	Where the pedestrian access route crosses rail systems at grade, the horizontal gap at the inner edge of each rail shall be constructed to the minimum dimension necessary to allow passage of railroad car wheel flanges and shall not exceed 2-½ inches (64 mm). EXCEPTION: On tracks that carry freight, a maximum horizontal gap of 3 inch (75 mm) shall be permitted.	Comments: The cost of installation of materials to meet the 2.5-inch maximum gap and detectable warnings at railroad (RR) crossings may be significant. Recommendations: Recommend an exemption from this requirement until at least 4 years after appropriate gap closure technology is approved by the Federal Railroad Administration (FRA).
1103.7.1	Detectable Warnings.	Where rail systems cross pedestrian facilities that are not shared with vehicular ways, a detectable warning shall be provided in compliance with 1108.	<i>See discussion and recommendations in Section 1108.</i>
1103.8	Changes in Level.	Changes in level shall comply with 303. Changes in level shall be separated horizontally 30 inches (760 mm) minimum. EXCEPTION: The horizontal separation requirement shall not apply to detectable warnings.	<i>See discussion of and recommendations for Section 1103.8, Changes in Level [of the Pedestrian Access Route], in Areas of Primary Concern section.</i>
1103.8.1	Rail Crossings.	Where the pedestrian access route crosses rail systems at grade, the surface of the pedestrian access route shall be level and flush with the top of the rail at the outer edge and between the rails.	

1104 Curb Ramps and Blended Transitions

1104.1	General.	Curb ramps and blended transitions shall comply with 1104.	
1104.2	Types.	Perpendicular curb ramps shall comply with 1104.2.1 and 1104.3; parallel curb ramps shall comply with 1104.2.2 and 1104.3; blended transitions shall comply with 1104.2.3 and 1104.3.	<i>See discussion on Section 1104.2, Types [of Curb Ramps and Blended Transitions], in Areas of Primary Concern section.</i>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1104.2.1	Perpendicular Curb Ramps.	Perpendicular curb ramps shall comply with 1104.2.1, and shall have a running slope that cuts through the curb at right angles or meets the gutter grade break at right angles.	
1104.2.1.1	Running Slope.	The running slope shall be 1:48 minimum and 1:12 maximum.	<p>Comments: In hilly terrain, due to the slope of the sidewalk and/or the roadway, it may not be possible to provide a perpendicular curb ramp with a running slope between 1V:48H and 1V:12H.</p> <p>Recommendations: Recommend adding the following text to Section 1104.2.2.1: "EXCEPTION: A perpendicular curb ramp shall not be required to exceed 15 feet (4570 mm) in length."</p>
1104.2.1.2	Cross Slope.	The cross slope shall be 1:48 maximum. EXCEPTION: This requirement shall not apply to mid-block crossings.	<p>Comments: Constructing maximum 1V:48H cross slopes on perpendicular curb ramps will be very costly in areas of hilly terrain.</p>
1104.2.1.3	Landing.	A landing 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear floor or ground space. Running and cross slopes shall be 1:48 maximum. EXCEPTION: Running and cross slope requirements shall not apply to mid-block crossings.	<p>Comments: The increased width recommendation for landings is consistent with the increased sidewalk width; thus, this would result in a nominal increase in construction costs.</p>
1104.2.1.4	Flares.	Flared sides with a slope of 1:10 maximum, measured along the curb line, shall be provided where a circulation path crosses the curb ramp.	<p>Comments: It is unclear what the required slope of 1V:10H is relative to -- Is it relative to the grade of the sidewalk? Is it relative to horizontal?</p> <p>Recommendations: Recommend changing the wording of this guideline to something similar to the "Building a True Community" Report: "The length of the flares shall be at least ten times the curb height, measured along the curb line."</p>
1104.2.2	Parallel Curb Ramps.	Parallel curb ramps shall comply with 1104.2.2, and shall have a running slope that is in-line with the direction of sidewalk travel.	<p>Recommendations: Recommend modifying wording for clarification: "...running slope that is <i>parallel to the curb</i>."</p>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1104.2.2.1	Running Slope.	The running slope shall be 1:48 minimum and 1:12 maximum. EXCEPTION: A parallel curb ramp shall not be required to exceed 15 feet (4570 mm) in length.	<p>Comments: It is unclear whether the 15-foot maximum length refers to the entire curb ramp or each sloping side.</p> <p>Recommendations: Recommend keeping the "exception," as well as clarifying what specific dimension it refers to. Also recommend adding language which states that if the slope of a parallel curb ramp is steeper than 1V:20H, it does not invoke the requirements of Section 405 of ADAAG, i.e., handrails, etc.</p>
1104.2.2.2	Cross Slope.	The cross slope shall be 1:48 maximum.	
1104.2.2.3	Landing.	A landing 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space. Running and cross slopes shall be 1:48 maximum. EXCEPTION: Running and cross slope requirements shall not apply to mid-block crossings.	
1104.2.2.4	Diverging Sidewalks.	Where a parallel curb ramp does not occupy the entire width of a sidewalk, drop-offs at diverging segments shall be protected with a barrier.	<p>Comments: 1.) Is a barrier required for a minimal drop-off of a couple inches or less? Can it be sloped like the flared section of a perpendicular ramp? 2.) Should there be a recommendation for a minimum sidewalk width in which the entire sidewalk should be used for the parallel ramp?</p> <p>Recommendations: 1.) Recommend allowing alternate treatments for delineating diverging segments of sidewalk at parallel curb ramps. 2.) Recommend stating a minimum width for sidewalk diverges to ensure that an unusable space is not created. 3.) Further guidance, including diagrams, would be helpful. <i>See also discussion of "Barrier" in the Definitions section of the Overview Document.</i></p>
1104.2.3	Blended Transitions.	Blended transitions shall comply with 1104.3, and shall have running and cross slopes of 1:48 maximum.	
1104.3	Common Elements.	Curb ramps and blended transitions shall comply with 1104.3.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1104.3.1	Width.	The clear width of landings, blended transitions, and curb ramps, excluding flares, shall be 48 inches (1220 mm) minimum.	
1104.3.2	Detectable Warnings.	Detectable warning surfaces complying with 1108 shall be provided, where a curb ramp, landing, or blended transition connects to a crosswalk.	<p>Comments: 1.) If a 1V:15H slope is considered detectable by various disabled groups, the State DOTs would welcome the reduction in cost that not having to install detectable warnings at these locations would provide. 2.) Does the crosswalk reference exclude driveways, parking spaces, and other features?</p> <p>Recommendations: 1.) Recommend allowing the construction of ramp slopes steeper than 1V:15H without detectable warnings, as discussed in the commentary section of the draft guidelines. See <i>also comments in Section 1108</i>. 2.) Recommend clarification on locations for detectable warnings.</p>
1104.3.3	Surfaces.	Surfaces of curb ramps, blended transitions, and landings shall comply with 302. Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutter areas within the pedestrian access route.	<p>Comments: The surface recommendations are believed to be a minimal impact on new construction. However, there are potential high costs in alteration if an access cover is located on a landing, as this would require substantial drainage or possibly utility work.</p>
1104.3.4	Grade Breaks.	Grade breaks shall not be permitted on curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.	
1104.3.5	Changes in Level.	Vertical changes in level shall not be permitted on curb ramps, blended transitions, landings, or gutter areas within the pedestrian access route.	
1104.3.6	Counter Slopes.	The counter slope of the gutter area or street at the foot of a curb ramp or blended transition shall be 1:20 maximum.	<p>Comments: There is a concern that achieving this counter slope on minor alteration projects could incur large costs.</p>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1104.3.7	Clear Space.	Beyond the curb line, a clear space of 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.	<p>Comments: 1.) Is this clear space required for a parallel curb ramp or is it redundant? 2.) Where is 'beyond the curb line' measured from? Front or back of curb or other? In addition, in which direction from the curb line is it measured for each type of ramp -- toward the street or toward the sidewalk?</p> <p>Recommendations: 1.) Recommend that this clear space "beyond the curb line" not be required for parallel curb ramps as it would be a duplication of the landing space. 2.) Recommend clarification of where to measure clear space from for perpendicular curb ramps (assumed to be face of curb).</p>

1105 Pedestrian Crossings

1105.1	General.	Pedestrian crossings shall comply with 1105.	
1105.2	Crosswalks.	Crosswalks shall comply with 1105.2.	
1105.2.1	Width.	Marked crosswalks shall be 96 inches (2440 mm) wide minimum.	<i>See discussion of and recommendations for Section 1105.2.1, Width [of Crosswalks], in Areas of Primary Concern section.</i>
1105.2.2	Cross Slope.	The cross slope shall be 1:48 maximum measured perpendicular to the direction of pedestrian travel. EXCEPTION: This requirement shall not apply to mid-block crossings.	<i>See discussion of and recommendations for Sections 1103.4, Cross Slope [of the Pedestrian Access Route], and 1105.2.2, Cross Slope [of Crosswalks], in Areas of Primary Concern section.</i>
1105.2.3	Running Slope.	The running slope shall be 1:20 maximum measured parallel to the direction of pedestrian travel in the crosswalk.	<p>Comments: A maximum running slope of 1V:20H will not be achievable on crosswalks in some superelevated (curved and banked) sections of roadway. If the crosswalk cannot be moved (due to the "prohibited reduction in access" guideline of Section 1102.2.2.2), then this should be considered "technically infeasible."</p> <p>Recommendations: Recommend an exception for crosswalks across superelevated (banked) sections of roadways.</p>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1105.3	Pedestrian Signal Phase Timing.	All pedestrian signal phase timing shall be calculated using a pedestrian walk speed of 3.0 feet per second (0.91 m/s) maximum. The total crosswalk distance used in calculating pedestrian signal phase timing shall include the entire length of the crosswalk plus the length of the curb ramp.	<i>See discussion of and recommendations for Section 1105.3, Pedestrian Signal Phase Timing, in Areas of Primary Concern section.</i>
1105.4	Medians and Pedestrian Refuge Islands.	Medians and pedestrian refuge islands in crosswalks shall comply with 1105.4 and shall be cut through level with the street or have curb ramps complying with 1104 and shall contain a pedestrian access route complying with 1103. Where the cut-through connects to the street, edges of the cut-through shall be aligned with the direction of the crosswalk for a length of 24 inches (610 mm) minimum.	Comments: Impact expected to be minimal, as new construction often follows this requirement but with three-foot wide ramps. However, the stipulation that the ends of the cut-through be aligned with the direction of the crosswalk could pose drainage issues.
1105.4.1	Length.	Where signal timing is inadequate for full crossing of all traffic lanes or where the crossing is not signalized, cut-through medians and pedestrian refuge islands shall be 72 inches (1830 mm) minimum in length in the direction of pedestrian travel.	
1105.4.2	Detectable Warnings.	Medians and refuge islands shall have detectable warnings complying with 1108. Detectable warnings at cut-through islands shall be separated by a 24 inch (610 mm) minimum length of walkway without detectable warnings. EXCEPTION: Detectable warnings shall not be required on cut-through islands where the crossing is controlled by signals and is timed for full crossing.	<i>See comments in Section 1108.</i>
1105.5	Pedestrian Overpasses and Underpasses.	Pedestrian overpasses and underpasses shall comply with 1105.5.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1105.5.1	Pedestrian Access Route.	Pedestrian overpasses and underpasses shall contain a pedestrian access route complying with 1103.	
1105.5.2	Running Slope.	The running slope shall not exceed 1:20 maximum.	
1105.5.3	Approach.	Where the approach exceeds 1:20, the approach shall be a ramp 48 inches (1220 mm) minimum in width and shall comply with 405. Where the rise of a ramped approach exceeds 60 inches (1525 mm), an elevator complying with 407, or a limited-use/limited-application elevator complying with 408 shall be provided.	<i>See discussion of and recommendations for Section 1105.5.3, Approach [for Pedestrian Overpasses and Underpasses], in Areas of Primary Concern section.</i>
1105.5.4	Stairs.	Stairs shall comply with 504.	
1105.5.5	Escalators.	Escalators shall comply with 810.9.	
1105.6	Roundabouts.	Where pedestrian crosswalks and pedestrian facilities are provided at roundabouts, they shall comply with 1105.6.	<i>See discussion of and recommendations for Sections 1105.6, Roundabouts, 1105.6.1, Separation, and 1105.6.2, Signals, in Areas of Primary Concern section.</i>
1105.6.1	Separation.	Continuous barriers shall be provided along the street side of the sidewalk where pedestrian crossing is prohibited. Where railings are used, they shall have a bottom rail 15 inches (380 mm) maximum above the pedestrian access route.	<i>See discussion of and recommendations for Sections 1105.6, Roundabouts, 1105.6.1, Separation, and 1105.6.2, Signals, in Areas of Primary Concern section. See also discussion of "Barrier" in the Definitions section.</i>
1105.6.2	Signals.	A pedestrian activated traffic signal complying with 1106 shall be provided for each segment of the crosswalk, including the splitter island. Signals shall clearly identify which crosswalk segment the signal serves.	<i>See discussion of and recommendations for Sections 1105.6, Roundabouts, 1105.6.1, Separation, and 1105.6.2, Signals, in Areas of Primary Concern section.</i>

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1105.7	Turn Lanes at Intersections.	Where pedestrian crosswalks are provided at right or left turn slip lanes, a pedestrian activated traffic signal complying with 1106 shall be provided for each segment of the pedestrian crosswalk, including at the channelizing island.	<i>See discussion of and recommendations for Section 1105.7, Turn Lanes at Intersections, in Areas of Primary Concern section.</i>

1106 Accessible Pedestrian Signal Systems

1106.1	General.	Pedestrian signal systems shall comply with 1106.	<i>See discussion of and recommendations for Section 1106.1, General [Accessible Pedestrian Signal Systems], in Areas of Primary Concern section.</i>
1106.2	Pedestrian Signal Devices.	Each crosswalk with pedestrian signal indication shall have a signal device which includes audible and vibrotactile indications of the WALK interval. Where a pedestrian pushbutton is provided, it shall be integrated into the signal device and shall comply with 1106.3.	
1106.2.1	Location.	Pedestrian signal devices shall be located 60 inches (1525 mm) maximum from the crosswalk line extended, 120 inches (3050 mm) maximum and 30 inches (760 mm) minimum from the curb line, and 120 inches (3050 mm) minimum from other pedestrian signal devices at a crossing. The control face of the signal device shall be installed to face the intersection and be parallel to the direction of the crosswalk it serves. EXCEPTION: The minimum distance from other signal devices shall not apply to signal devices located in medians and islands.	<p>Comments: 1.) Space limitations may make it difficult to place separate signal components at the required spacing. 2.) Clarify what is meant by "pedestrian signal device" -- Is this just the push-button, or does it include other items such as the auditory tone, pole, walk/don't walk signs, etc.? 3.) Is "control face" a recognized term for pedestrian signals? It appears to refer to the "walk/don't walk" panel. This section could be reworded for clarity.</p> <p>Recommendations: 1.) Recommend developing illustrative standard drawings for intersections using required spacings to determine feasibility and reasonability of spacing. 2.) Recommend defining "pedestrian control device" or rewording first sentence. 3.) Recommend rewording second sentence to state: "The face of the pedestrian signal should face the crosswalk it serves."</p>
1106.2.2	Reach and Clear Floor or Ground Space.	Pedestrian signal devices shall comply with 308. A clear floor or ground space complying with 305 shall be provided at the signal device and shall connect to or overlap the pedestrian access route.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1106.2.3	Audible Walk Indication.	The audible indication of the WALK interval shall be by voice or tone.	
1106.2.3.1	Tones.	Tones shall consist of multiple frequencies with a dominant component at 880 Hz. The duration of the tone shall be 0.15 seconds and shall repeat at intervals of 0.15 seconds.	
1106.2.3.2	Volume.	Tone or voice volume measured at 36 inches (915 mm) from the pedestrian signal device shall be 2 dB minimum and 5 dB maximum above ambient noise level and shall be responsive to ambient noise level changes.	Comments: Anticipate increased installation and maintenance costs for additional equipment, such as the audible walk tone.
1106.3	Pedestrian Pushbuttons.	Pedestrian pushbuttons shall comply with 1106.3.	Comments: Several of the requirements for accessible pedestrian signals are anticipated as having a major impact with regard to both cost and manpower, such as the extended button press feature, which not all controllers support and for which new national specifications would be needed.
1106.3.1	Operation.	Pedestrian pushbuttons shall comply with 309.4.	
1106.3.2	Locator Tone.	Pedestrian pushbuttons shall incorporate a locator tone at the pushbutton. Locator tone volume measured at 36 inches (915 mm) from the pushbutton shall be 2 dB minimum and 5 dB maximum above ambient noise level and shall be responsive to ambient noise level changes. The duration of the locator tone shall be 0.15 seconds maximum and shall repeat at intervals of one second. The locator tone shall operate during the DON'T WALK and flashing DON'T WALK intervals only and shall be deactivated when the pedestrian signal system is not operative.	Comments: Anticipate increased installation and maintenance costs for additional equipment, such as the device to measure ambient noise levels.

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1106.3.3	Size and Contrast.	Pedestrian pushbuttons shall be a minimum of 2 inches (51 mm) across in one dimension and shall contrast visually with their housing or mounting.	
1106.3.4	Optional Features.	An extended button press shall be permitted to activate additional features. Buttons that provide additional features shall be marked with three Braille dots forming an equilateral triangle in the center of the pushbutton.	<p>Comments: 1.) The extended button push should be allowed as an alternative to using a walk speed of 3 fps and the longer crossing distance discussed in Section 1105.3. 2.) The specification of a single push button with three braille dots for additional features may preclude future enhancements to the signals, and/or the provision of a variety of features using individual buttons.</p> <p>Recommendations: 1.) Recommend utilizing the extended button push as an alternative to using a 3-foot-per-second walking speed at all intersections. 2.) Recommend removal of the requirement for the Braille dots to allow for future enhancements/additional buttons.</p>
1106.4	Directional Information and Signs.	Pedestrian signal devices shall provide tactile and visual signs on the face of the device or its housing or mounting indicating crosswalk direction and the name of the street containing the crosswalk served by the pedestrian signal.	
1106.4.1	Arrow.	Signs shall include a tactile arrow aligned parallel to the crosswalk direction. The arrow shall be raised 1/32 inch (0.8 mm) minimum and shall be 1-1/2 inches (38 mm) minimum in length. The arrowhead shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft. Stroke width shall be 10 percent minimum and 15 percent maximum of arrow length. The arrow shall contrast with the background.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1106.4.2	Street Name.	Signs shall include street name information aligned parallel to the crosswalk direction and complying with 703.2.	Comments: 1.) This guideline would require custom signs at each and every location, which will increase the cost and time required to install and maintain as compared to simple, mass-produced arrow signs without street name information. 2.) It is not clear if Braille is required in addition to raised letters. 3.) Given the stipulations for text size and spacing, a long street name may make the sign protrude greater than 4 inches, which is the maximum allowed under Section 1102.5.2.
1106.4.3	Crosswalk Configuration.	Where provided, graphic indication of crosswalk configuration shall be tactile and shall comply with 703.5.1.	

1107 Street Furniture

1107.1	General.	Street furniture shall comply with 1107.	Comments: 1.) The State DOTs are concerned that they will be held liable for privately owned street fixtures and furniture on State roads over which they have little control, simply because it falls within their right-of-way. In many cases, there are maintenance agreements with local jurisdictions, but these would do little to protect States from being sued. 2.) An inventory and monitoring system for privately owned street fixtures and furniture on public rights-of-way would need to be created and maintained by the DOTs. This would involve notable initial time and cost at start-up and potential significant costs to fix any identified problems, partly because the responsible parties for these fixtures vary from state to state. These inventories would also have training costs to teach what needs to be inventoried and maintained. Finally, these inventories would affect local jurisdictions the greatest because of the number of sites with furniture under local agencies' control. 3.) Some states cannot require a permit for nor remove newspaper boxes due to first amendment laws; thus, there is little the State DOT can do to regulate these (and possibly other) street appurtenances. 4.) The end result of all of these potential problems may be a reduction in or elimination of new street furniture.
1107.2	Clear Floor or Ground Space.	Street furniture shall have clear floor or ground space complying with 305 and shall be connected to the pedestrian access route. The clear floor or ground space shall overlap the pedestrian access route 12 inches (305 mm) maximum.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1107.3	Drinking Fountains.	Where drinking fountains are provided, they shall comply with 602.	
1107.4	Public Telephones.	Where public telephones are provided, they shall comply with 1107.4.	
1107.4.1	Single Telephone.	Where a single public telephone is provided, it shall comply with 704.2 and 704.4	
1107.4.2	Multiple Telephones.	Where a bank of public telephones is provided, at least one telephone shall comply with 704.2, and at least one additional telephone shall comply with 704.4.	
1107.4.3	Volume Controls.	All public telephones shall provide volume controls complying with 704.3.	
1107.5	Public Toilet Facilities.	Permanent or portable public toilet facilities shall comply with 603. At least one fixture of each type provided shall comply with 604 through 610. Operable parts, dispensers, receptacles, or other equipment shall comply with 309. EXCEPTION: Where multiple single-user toilet facilities are clustered at a single location, at least 5 percent, but no fewer than one single-user toilet at each cluster shall comply with 603 and shall be identified by the International Symbol of Accessibility complying with 703.7.2.1.	
1107.6	Tables, Counters, and Benches.	Tables, counters, and benches shall comply with 1107.6.	
1107.6.1	Tables.	Where tables are provided in a single location, at least 5 percent but no fewer than one, shall comply with 902.	
1107.6.2	Counters.	Where provided, counters shall comply with 904.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1107.6.3	Benches.	Where benches without tables are provided at a single location, at least 50 percent, but no fewer than one, shall comply with 903 and shall have an armrest on at least one end.	

1108 Detectable Warning Surfaces

1108.1	General.	Detectable warnings shall consist of a surface of truncated domes aligned in a square grid pattern and shall comply with 1108.	Comments: There is a high potential for increased costs in installation, construction, and/or litigation. There are costs to perform the necessary tests to determine what materials work best under what conditions. Testing is currently being done on slipperiness and other characteristics of various materials. Differences in temperature can cause the material to separate from the concrete. Poor performance could result in high maintenance efforts and increased inspection efforts. There are questions about liability concerns when a tripping hazard is created by the separated material (how often to inspect, how soon to repair, etc.). A major concern is that if the devices are viewed as a safety treatment, the courts may require them to be installed at all locations. This would be a major impact for states and an even larger impact for municipalities.
1108.1.1	Dome Size.	Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inches (23 mm) minimum to 1.4 inches (36 mm) maximum, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 inches (5 mm).	
1108.1.2	Dome Spacing.	Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inches (16 mm) minimum, measured between the most adjacent domes on square grid.	
1108.1.3	Contrast.	Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1108.1.4	Size.	Detectable warning surfaces shall extend 24 inches (610 mm) minimum in the direction of travel and the full width of the curb ramp, landing, or blended transition.	Recommendations: A maximum measurement for detectable warnings in the direction of travel is recommended, since wheelchair users are not fond of them and they are a potential tripping hazard for ambulatory people.
1108.2	Location.		Comments: The possibility of placing detectable warnings on curb ramps leading to driveways is not addressed in the current draft guidelines. This may be advisable depending on how large the driveway is (e.g., a large business entrance) and/or whether it is depressed or not. Recommendations: Recommend further guidance.
1108.2.1	Curb Ramps and Blended Transitions.	The detectable warning surface shall be located so that the edge nearest the curb line is 6 inches (150 mm) minimum and 8 inches (205 mm) maximum from the curb line.	Comments: It is unclear whether the phrase "curb line" refers to the face or back of curb, which would affect the placement of the detectable warning. Recommendations: Recommend modifying wording: "...so that the edge nearest the curb is...from the face [or back] of curb."
1108.2.2	Rail Crossings.	The detectable warning surface shall be located so that the edge nearest the rail crossing is 6 inches (150 mm) minimum and 8 inches (205 mm) maximum from the vehicle dynamic envelope.	
1108.2.3	Platform Edges.	Detectable warning surfaces at platform boarding edges shall be 24 inches (610 mm) wide and shall extend the full length of the platform.	

1109 On-Street Parking

1109.1	General.	Car and van on-street parking spaces shall comply with 1109.	
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SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1109.2	Parallel Parking Spaces.	An access aisle at least 60 inches (1525 mm) wide shall be provided at street level the full length of the parking space. The access aisle shall connect to a pedestrian access route serving the space. The access aisle shall not encroach on the vehicular travel lane. EXCEPTION: An access aisle is not required where the width of the sidewalk between the extension of the normal curb and boundary of the public right-of-way is less than 14 feet (4270 mm). When an access aisle is not provided, the parking space shall be located at the end of the block face.	Comments: 1.) It appears that these requirements apply to all parking spaces, instead of only to the accessible spaces. 2.) Bike lanes should not be considered travel lanes with regard to the restriction that "the access aisle shall not encroach on the vehicular travel lane." Recommendations: 1.) Recommend beginning section, "For accessible parking spaces,..." 2.) Recommend adding an exception stating that bike lanes are allowed to overlap the access aisle.
1109.3	Perpendicular or Angled Parking Spaces.	Where perpendicular or angled parking is provided, an access aisle 96 inches (2440 mm) wide minimum shall be provided at street level the full length of the parking space and shall connect to a pedestrian access route serving the space. Access aisles shall be marked so as to discourage parking in them.	Comments: It appears that these requirements apply to all parking spaces, instead of only to the accessible spaces. Recommendations: Recommend rewording beginning of section to state, "Where <i>accessible</i> perpendicular or angled parking is provided,..."
1109.4	Curb Ramps or Blended Transition.	A curb ramp or blended transition complying with 1104 shall connect the access aisle to the pedestrian access route.	
1109.5	Obstructions.	There shall be no obstructions on the sidewalk adjacent to and for the full length of the space. EXCEPTION: This provision shall not apply to parking signs complying with 1109.6 and parking meters complying with 1109.7.2.	Comments: It is unclear how far back on the sidewalk from the accessible parking space this restriction applies, i.e., how far back is "adjacent to...the space"? Recommendations: Recommend clarifying verbiage.
1109.6	Signs.	Parking spaces shall be designated as reserved by a sign complying with 502.6. Signs shall be located at the head or foot of the parking space so as not to interfere with the operation of a side lift or a passenger side transfer.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1109.7	Parking Meters.	Where parking meters are provided, they shall comply with 1109.7.	
1109.7.1	Operable Parts.	Operable parts shall comply with 309.	
1109.7.2	Location.	A parking meter shall be located at the head or foot of the parking space so as not to interfere with the operation of a side lift or a passenger side transfer. EXCEPTION: Where parking meters are not provided at the space, but payment for parking in the space is included in a centralized collection box or paying station, the space shall be connected to the centralized collection point with a pedestrian access route.	
1109.7.3	Displays and Information.	Displays and information shall be visible from a point located 40 inches (1015 mm) maximum above the center of the clear floor space in front of the meter.	Recommendations: Recommend rephrasing guideline related to information being "visible from" a given distance. The term "visible" implies different things to people with different sight abilities.
1110 Call Boxes			
1110.1	General.	Call boxes shall comply with 1110.	Comments: Clarification is needed on the type of roadway improvement that would trigger the need for accessibility improvements to call boxes.
1110.2	Operable Parts.	Operable parts shall comply with 308 and 309.4. Where provided, labeling shall comply with 703.2 and 703.3. EXCEPTION: Mechanically operated systems in which the signal is initiated by a lever pull shall be permitted to have an activating force of 12 lbf (53.4 N) maximum.	
1110.3	Turning Space.	A turning space complying with 304 shall be provided at the controls.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1110.4	Edge Protection.	Edge protection complying with 405.9.2 shall be provided where the area at the call box is adjacent to an abrupt level change.	
1110.5	Motor Vehicle Turnouts.	Where provided, a motor vehicle turnout shall have a minimum paved area of 16 feet (4880 mm) wide minimum and 23 feet (7015 mm) long minimum and shall connect to the turning space at the call box with a pedestrian access route complying with 1103. Where shoulder texturing is used, it shall be discontinued at the turnout.	
1110.6	Two-Way Communication.	Where provided, two-way voice communication shall comply with 1110.6, 708.2 and 708.3.	
1110.6.1	Volume Controls.	Volume controls complying with 704.3 shall be provided.	
1110.6.2	TTY.	A TTY complying with 704.4 shall be provided.	

1111 Alternate Circulation Path

1111.1	General.	Alternate circulation paths shall comply with 1111.	
1111.2	Width.	The alternate circulation path shall have a width of 36 inches (915 mm) minimum.	
1111.3	Location.	The alternate circulation path shall parallel the disrupted pedestrian access route, on the same side of the street.	<i>See discussion of and recommendations for Sections 1102.3, Alternate Circulation Path, and 1111.3, Location [of Alternate Circulation Paths], in Areas of Primary Concern section.</i>
1111.4	Protection.	The alternate circulation path shall comply with 307 and shall be protected with a barricade complying with 1111.6 to separate the pedestrian access route and alternate circulation path from any adjacent construction, drop-offs, openings, or other hazards.	

SECTION	TITLE	DRAFT GUIDELINE	COMMENTS AND RECOMMENDATIONS
1111.5	Signs.	Signs complying with 703.5 shall be provided at both the near side and the far side of the intersection preceding a disrupted pedestrian access route.	Comments: Costs for installation and maintenance of signage could be moderate, especially if broadcast signage or flashing beacon lights accompanied by an audible tone are required. Additional research is needed to determine acceptable signs for various situations. In addition, these signs would need to be included in the MUTCD.
1111.6	Barricades.	Barricades shall be continuous, stable, and non-flexible and shall consist of a solid wall or fence or a Type II or Type III barricade as specified in MUTCD section 6F-60 with the bottom or lower rail 1-1/2 inches (38 mm) maximum above the ground or walkway surface, and the top of the fence, wall or upper rail 36 inches (915 mm) minimum above the ground or walkway surface. Barricade support members shall not protrude beyond the barricade face into the pedestrian access route or alternate circulation path.	Recommendations: Recommend the development of a specification for "barricade" that can be incorporated into the MUTCD as appropriate. Also recommend defining "barricade" in the appropriate definitions section instead of as part of the guidelines.

AASHTO POLICY RESOLUTION PR-6-02

**TITLE: AASHTO'S RESPONSE ON THE US ACCESS BOARD'S
DRAFT GUIDELINES FOR ACCESSIBLE PUBLIC RIGHTS-OF-WAY**

WHEREAS, AASHTO created an Ad-hoc Task Force on Accessibility in Public Rights-of-Way consisting of representatives from: the Standing Committee on Highways; the Standing Committee on Public Transportation; the Highway Subcommittees on Construction, Design, Maintenance, and Traffic Engineering; and the Joint Task Force on Non-Motorized Transportation; and

WHEREAS, the Task Force was charged with developing a response to the Draft Guidelines for Accessible Public Rights-of-Way that were recently released by the US Architectural and Transportation Barriers Compliance Board, also known as the US Access Board; and

WHEREAS, the guidelines include sections on scoping requirements, pedestrian access routes, curb ramps and blended transitions, pedestrian crossings, accessible pedestrian signal systems, work zones, street furniture, detectable warning surfaces, on-street parking, call boxes, and alternate circulation paths; and

WHEREAS, the Task Force diligently worked to represent the views of all AASHTO member state transportation departments in its recommendations; and

WHEREAS, these recommendations help to ensure accessibility for all while maintaining the engineering guidelines that have become critical to constructing, operating, and maintaining a safe and efficient transportation system.

NOW, THEREFORE, BE IT RESOLVED, that the AASHTO Board of Directors approves the recommendations developed by the Task Force on Accessibility in Public Rights-of-Way and subsequently endorsed by the Standing Committee on Highways; and

BE IT FURTHER RESOLVED, that the AASHTO Board of Directors directs that these recommendations be submitted to the US Access Board on or before October 28, 2002, as the official AASHTO response to the request for comments on the Draft Guidelines for Accessible Public Rights-of-Way; and

BE IT FURTHER RESOLVED, that the AASHTO Board of Directors calls on the US Access Board to provide cost estimates for the implementation of these guidelines to illustrate the potential financial impacts of their proposed solutions to accessibility issues on the implementing agencies prior to the release of the Notice of Proposed Rule Making on Accessible Public Rights-of-Way.

*Adopted by the AASHTO Board of Directors
October 14, 2002*