ATTACHMENT O

DRAFT PROGRAMMATIC ACCESSIBILITY STANDARDS FOR NPS INTERPRETIVE MEDIA DATED NOVEMBER 29, 2006

29 PAGES

Programmatic Accessibility Standards

For National Park Service Interpretive Media

DRAFT

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Harpers Ferry Center Accessibility Committee

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Statement of Purpose

This document publishes standards for National Park Service employees to use as they develop interpretive media. Interpretive media like publications, exhibits, and audiovisuals provide park visitors with information and context so that their experience of visiting national parks can be both safe and meaningful. Park visitors who have physical and mental disabilities have a legally established civil right to receive the same information and context that NPS interpretive media products have always provided to their fellow citizens — but delivered in ways that are accessible to their abilities.

Whenever NPS decision makers, writers, designers, media producers, contractors, interpreters, rangers, or superintendents knowingly ignore or minimize the mandate to communicate with people with disabilities, they commit an act of discrimination.

How the National Park Service can provide programmatic access in its interpretive efforts to communicate with people with disabilities is a challenging, complex, and confusing topic. We all need guidance about how to apply standards and best practices servicewide. That is the key function of this document.

These National Park Service Standards define what design and content solutions represent accepted full programmatic access in **most** interpretive media situations. The Standards acknowledge that NPS employees who create and review interpretive media must remain flexible and versatile because park resources and circumstances are so diverse. No one document can prescribe solutions for every situation that arises in the National Park system.

This document also briefly discusses key areas of concern, with practical information organized by media product type. Although we divide the following standards by product type to make it easier to find guidance, NPS employees recognize that no interpretive media product does its work alone. Publications, exhibits, and audiovisuals all have inherent strengths and weaknesses. Park visitors sample and benefit from many interpretive media, not just one product type. Success in improving interpretive programmatic accessibility in national parks occurs when media products are planned to work as a team. Where one product may be weak, another product can be planned to provide programmatic access to that missing interpretive content.

Planning begins with comprehensive park wide interpretive planning. Early recognition of, and sensitivity to, accessibility issues will result in the most successful media.

The goal is to fully comply with stated NPS policy:

"... provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve park resources and preserve the quality of the park experience for everyone."

NPS Special Directive 83-3, Accessibility for Disabled Persons

Laws that Govern Interpretive Media

Harpers Ferry Center is committed to providing interpretive media that are accessible to all potential users. Media shall be planned, designed, fabricated, and installed in a manner consistent with the following goals. Current standards and specifications used to ensure that these goals are met include:

- National Park Service (NPS) Director's Order #42
  www.nps.gov/policy/DOrders/DOrder42.html

- Section 508 of the Rehabilitation Act (see more information below)
  www.section508.gov/

- Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (same as Architectural Barriers Act Accessibility Standards – ABAAS); federal facilities must use Chapters F1 and F2/Chapters 3-10
  www.access-board.gov/ada-aba/index.htm

More information on Section 508 Requirement

The requirement for both captioning and audio description is "specifically mandated" in the U.S. Access Boards standards for Section 508 of the Rehabilitation Act. The full version of those standards can be found at the following location:

The specific section that relates to video and multimedia products is copied below:

Electronic and Information Technology Accessibility Standards

ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

[Published in the *Federal Register* on December 21, 2000]

§ 1194.24 Video and multimedia products.

(a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.

(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.

(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

These section 508 standards have been official since December of 2000.

Accountability

Park Superintendents: "...Superintendents ensure all of their programs, facilities, and services are accessible, in conformance with applicable laws, regulations, standards and policies. Each superintendent ensures all new programs, facilities and services are designed, constructed and delivered in compliance with accessibility requirements...."

Director's Order #42 (draft update per 11/2/06)

Harpers Ferry Center:
"The HFC is responsible for the overall management and direction of interpretive media and technology throughout the NPS. The HFC works to ensure that the highest level of accessibility that is reasonable is incorporated into all aspects of interpretive media, planning, design and construction. This includes ensuring that all new interpretive media are provided in such a way as to be accessible to and usable by all persons with a disability. It also means all existing practices and procedures are evaluated to determine the degree to which they are currently accessible to all visitors, and modifications are made to assure conformance with applicable laws and regulations."

Director's Order #42

Where to Find Current Best Practices

Even though most media accessibility requirements are not spelled out like building accessibility codes, you are responsible to use the best practices at the time. These standards are not definitive and there are other sources of guidelines available:

- Principles of Universal Design - www.nps.gov/hfc/univ-design.htm
- Smithsonian guidelines - http://www.si.edu/opa/accessibility/exdesign/start.htm
- National Center on Accessibility - http://www.indiana.edu/~nca/

- NPS Accessibility: NPS.gov and InsideNPS
- Department of Interior
- DisabilityInfo.gov
- SEGD (Society for Environmental Graphic Design)

Note: previous to the May 2006 edition of these guidelines, this document was titled “Special Populations: Programmatic Accessibility Guidelines for Interpretive Media.”

NPS Accessibility Pictograph Symbols

Visit the NPS website - http://www.nps.gov/hfc/carto/map-symbols.htm to download symbols.

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Audiovisual Programs

Audiovisual programs include video programs, and audio and interactive programs (a.k.a. multimedia). Section 508 requires both captioning and audio description of audiovisual programs. The ABAAS requires assistive listening. As a matter of policy, (most?) audiovisual programs produced by the Harpers Ferry Center, including exhibit components, will include captioning, audio description, and assistive listening. The approach used will vary according to the conditions of the installation area and the media format used, and will be selected in consultation with the parks and regions.

Captioning, audio description, and assistive listening methods will be identified as early as possible in the planning process and will be presented in an integrated setting. Park management will decide on the most appropriate operational approach for the particular site.

Audiovisual Program Standards for Visitors with Mobility Impairments

1. The theater, auditorium, or viewing area should be accessible and free of architectural barriers, or alternative accommodations will be provided (see ABAAS Chapter 2: Scoping Requirements for complete requirements).

2. Wheelchair spaces in assembly areas including companions: see ABAAS Chapter 2 F221.1 thru F221.5 for requirements.

3. Viewing heights and angles will be favorable for those in designated wheelchair spaces. (see ABAAS Chapter 2 F221.2.3 for requirements)

4. In designing video or interactive components, control mechanisms: see Exhibit Standard for Visitors with Mobility Impairments in this document.

Audiovisual Program Standards for Visitors with Visual Impairments

Simultaneous audio description will be provided.

What is audio description?
Audio description describes the visual content of video or multimedia programs. It provides individuals who are visually impaired with information that further describes the visual content not provided in the primary audio track. Audio description is a separate audio track synchronized with the program's primary audio track. An audio description narrator describes actions, gestures, scene changes, and other visual information. The narrator also describes titles, speaker names, and other text that may appear on the screen. Audio description should be carefully scripted and is best produced by trained professionals.

Does everyone have to hear the audio description if it is selected?
No. The audio description is recorded on a separate audio track and is not heard over the main loudspeaker(s). Visitors requesting audio description will typically receive a headset and receiver. The audio description track is then transmitted to the headset via a radio frequency or infrared signal. Only those with headsets will hear the audio description track. (FAQ: Accessibility and Audiovisual Media, Harpers Ferry Center, November 2006)

Audiovisual Program Standards for Visitors with Hearing Loss

1. All audiovisual programs will be produced with captions.

What are captions?
Captions display spoken dialogue as printed words on television screens, computer monitors, projection screens, caption boards and other visual displays. Captions are specifically designed for viewers with hearing loss to enable their full participation when viewing video or multimedia productions. They include information regarding on- and off-screen sound effects such as music or laughter. Captions also hold secondary benefits for people who are learning a foreign language, learning how to read, or watching TV in a noisy area, as well as those who understand best by processing visual information.

What is the difference between open and closed captions?
Open captions are displayed automatically as part of the video, without having to be selected by the user.

Closed captions normally do not appear on screen unless the viewer has selected them to appear. The person viewing the presentation must be using technology that includes a closed caption decoder. The decoder will allow the otherwise-hidden data within the television signal to be displayed on the user's TV screen or computer monitor. Many newer television models allow viewers to toggle captions on or off with ease.

What is the difference between captions and subtitles?
Subtitles are used to translate dialogue into a different language. They are primarily intended for hearing audiences, while captions are primarily intended for people with hearing loss. Subtitles rarely convey nonverbal sounds such as music or sound effects, whereas captions identify speakers and sound effects using text such as a "phone ringing" or "footsteps," and use symbols to indicate other sounds such as music.

Captions are typically displayed on-screen as white letters within a black box. Subtitles are generally not displayed within a black box and do not have standardized font requirements.

What is a caption board?
A caption board is an LED screen that displays the captions. It is a separate piece of equipment placed underneath, above, or beside the projection screen or video monitor. Caption boards come in a variety of sizes. The correct size is determined by the size of the room, the size of the screen and the distance between audience and screen. Caption boards require a caption decoder.

What is the difference between showing captions on screen or on a caption board?

If you do not use a caption board, captions must be displayed over the picture on the monitor or screen. The smallest caption board costs at least $3,000 and therefore adds to the overall equipment and installation budget.

HFC recommends the use of caption boards because they allow for captions to be continually displayed without covering any on-screen program material. The correct size and placement of the caption board is essential for proper readability.

Do I have to display captions at all times?
Yes. Captions help us reach an even wider audience—from visitors with very moderate hearing loss to visitors who cannot hear at all. Always displayed, captions also automatically assist visitors who would otherwise not ask for this accessibility feature. Harpers Ferry Center recommends displaying captions at all times on a caption board or on-screen so that visitors requiring this assistance will not have to ask, and park personnel will not have to be trained to turn captions on and off upon request. (FAQ: Accessibility and Audiovisual Media, Harpers Ferry Center, November 2006)

2. Copies of scripts will be provided to the parks as a standard procedure.

3. Assistive listening systems and audio amplification will be provided. (ABAAS Chapter 2 F219 thru F219.3)

What is assistive listening?
Assistive listening utilizes various devices that amplify volume for individuals who have mild to profound hearing loss and may or may not use a hearing aid. Assistive listening devices (ALDs) include headsets, earbuds and induction loops. The amplified sound is transmitted via radio frequency, infrared, or induction loops to the user's headset, earbuds or hearing aid. (FAQ: Accessibility and Audiovisual Media, Harpers Ferry Center, November 2006)

Audiovisual Program Standards for Visitors with Learning Impairments

1. Unnecessarily complex and confusing concepts will be avoided.

2. Graphic elements will be chosen to communicate without reliance on the verbal component.

3. Narration will be concise and free of unnecessary jargon and technical information.

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Exhibits

Exhibits tell stories using objects, text, images, multimedia, interactives, figures, models, and lighting effects. High quality exhibits reveal relationships to park visitors — like context and the meaning of the artifacts the National Park Service has chosen to collect, conserve, and display. Visitors have the sovereignty to move through a series of museum exhibits at their own pace, making their own sense of the ideas presented, similar to turning the pages of a book. Visitors can pick and choose or move on, according to their level of interest.

Even at the start of a new museum project, NPS exhibit designers all too often have little control over defining the available exhibit space. Exhibits sometimes have to be put in places ill suited to serve that purpose. Pre-existing architectural structure or décor may limit many exhibit design decisions or restrict the choices for the most accessible visitor circulation.

Because the situations encountered in the visitor centers of the National Park Service are so diverse, it is impossible to create simple, comprehensive exhibit design guidelines that can be applied universally.

Every reasonable effort will be made to eliminate those factors that limit or block communication. In some cases the effort will involve physical modification; in other cases an alternate way of delivering the messages will have to be devised. Thoughtful, sensitive design can go a long way to produce NPS exhibits that can be enjoyed by a broad range of people.

Universal Design Principles and Guidelines

As applied to exhibits, these principles and guidelines define goals for the visitor experience; they are not specific design solutions. Each project is unique and will require creativity and sensitivity from the Contractor to develop exhibits that can be enjoyed by a broad range of people. Every reasonable effort shall be made to eliminate those factors that limit or block communication. In some cases the effort will involve physical modification; in other cases an alternate way of delivering the messages will have to be devised. Universal design principles include:

1. The design shall be useful to people with diverse abilities based on the following guidelines:

    A. Provide the same means of use for all users; identical whenever possible; equivalent when not.

    B. Avoid segregating or stigmatizing any users.

    C. Make provisions for privacy, security, and safety equally available to all users.

    D. Make the design appealing to all users.

2. The design shall accommodate a wide range of individual preferences and abilities based on the following guidelines:

    A. Provide choice in methods of use.

    B. Accommodate right- or left-handed access and use.

    C. Facilitate the user's accuracy and precision.

    D. Provide adaptability to the user's pace.

3. Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level based on the following guidelines:

    A. Eliminate unnecessary complexity.

    B. Be consistent with user expectations and intuition.

    C. Accommodate a wide range of literacy and language skills.

    D. Arrange information consistent with its importance.

    E. Provide effective prompting and feedback during and after task completion.

4. The design shall communicate necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities based on the following guidelines:

    A. Use the different modes (pictorial, audible, tactile) for redundant presentation of essential information.

    B. Maximize legibility of essential information.

    C. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).

    D. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

5. The design shall minimize hazards and the adverse consequences of accidental or unintended actions based on the following guidelines:

    A. Arrange elements to minimize hazards and errors. Make the most used elements the most accessible; eliminate, isolate, or shield hazardous elements.

    B. Provide warnings of hazards and errors.

C. Provide fail-safe features.

D. Discourage unconscious action in tasks that require vigilance.

6. Elements shall be designed for efficient and comfortable use with a minimum of fatigue based on the following guidelines:

A. Allow user to maintain a neutral body position.

B. Use reasonable operating forces.

C. Minimize repetitive actions.

D. Minimize sustained physical effort.

7. An appropriate size and space shall be provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility based on the following guidelines:

A. Provide a clear line of sight to important elements for any seated or standing user.

B. Make reach to all components comfortable for any seated or standing user.

C. Accommodate variations in hand and grip size.

D. Provide adequate space for the use of assistive devices or personal assistance.

Exhibits Standards for Visitors with Mobility Impairments

1. Circulation Space:

A. General: Circulation through the exhibit space shall meet the requirements of an accessible route as described in ABAAS, Chapter 4, "Accessible Routes".

B. Passageways through exhibits shall be at least **36" wide**.

C. If an exhibit passageway reaches a dead-end, a turning space shall be provided by either a T-shaped turning space which complies with ABAAS Figure 304.3.2 or a circular space of **60"** diameter minimum. The space shall be permitted to include knee and toe clearance complying with ABAAS 306.

2. Protruding Objects (ABAAS 307)

   A. Objects projecting from walls with their leading edges between **27"** and **80"** above the floor shall protrude no more than **4"** in passageways or aisles. Objects projecting from walls with their leading edges at or below **27"** above the floor can protrude any amount (*see ABAAS Figure 307.2 below*).

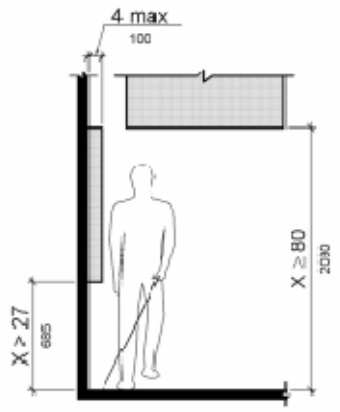

Figure 307.2
Limits of Protruding Objects

   B. Post-Mounted Objects: Free-standing objects mounted on posts or pylons shall overhang a maximum of **12"** from **27"** to **80"** above the floor. *(see ABAAS Figure 307.3 below)*

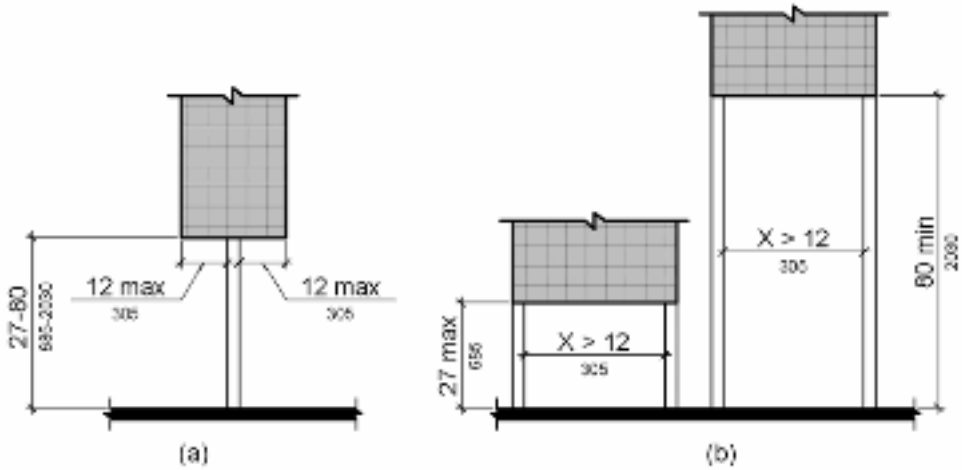

Figure 307.3
Post-Mounted Protruding Objects

   C. Passageways or other circulation spaces shall have a minimum clear headroom of **80"**. For example, signage hanging from the ceiling must have at least 80" from the floor to the bottom edge of the sign. *(see ABAAS Figure 307.2 above)*

D. Protruding objects shall not reduce the clear width required for accessible routes. (ABAAS 307.5)

3. Floors:

   A. Floors shall be stable, level, firm and slip-resistant.

   B. Changes in level:

      Changes in level between **1/4"** and **1/2"** shall be bevelled with a slope no greater than **1:2**.
      Changes in level greater than **1/2"** shall be accomplished by means of a ramp that complies with ABAAS 405, "Ramps".

   C. Carpet: Carpet or carpet tile shall be securely attached and shall comply with ABAAS 302.2 Carpet Pile Height. Exposed edges of the carpet shall be fastened to the floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with ABAAS 303, "Changes in Level".

4. Height/position of visual characters: Visual characters with a horizontal viewing distance of 72" or less on vertical exhibit walls should be placed at a minimum of 40" above the finished floor and no more than 70" above the floor. ABAAS Table 703.5.5.

5. Artifact Cases:

   A. Maximum height of floor of artifact case display area shall be no higher than **30"** from the floor of the room. This includes vitrines that are recessed into an exhibit wall.

   B. Artifact labels on a vertical surface shall comply with No. **4** above. Artifact labels on a horizontal surface shall be mounted at an angle to maximize their visibility to all viewers.

6. Touchable Exhibits: Touchable exhibits positioned horizontally should be placed no higher than **30"** from the floor. Also, if the exhibit is approachable only on one side, it should be no deeper than 24". Touchable exhibits positioned on a vertical surface shall be no lower than 15" above the finished floor and no higher than 48" above the finished floor. ABAAS 308.3.1

7. Railings/barriers: Railings around any horizontal model or exhibit element shall have a maximum height of **36"** from the floor.

8. Information desks: Information desks and sales counters shall include a section made to accommodate both a visitor in a wheelchair and an employee in a wheelchair working on the other side. A section of the desk/counter shall have the following dimensions:

A. Height from the floor to the top: **34** inches maximum, above the finished floor**. Exception:** If the counter is adjustable to provide a work surface at variable heights, 29" minimum to 36" maximum shall be permitted. **(**see ABAAS for kitchen counters, 804.3.2)

B. Minimum knee clearance space**:** (see item #9 below)

C. Width of top surface of section: at least **36 inches**. Additional space must be provided for any equipment such as a cash register.

D. Area underneath desk: Since both sides of the desk may have to accommodate a wheelchair, this area should be open all the way through to the other side. In addition, there should be no sharp or abrasive surfaces under the work surface of the counters. The floor space underneath and behind the counter shall be free of obstructions. The floor finish treatment shall continue all the way underneath the desk.

9. Seating - Interactive Stations/Work Areas: The minimum knee space underneath a work desk is **27" high**, **30" wide** and 20" **deep** (see ABAAS Figure 306.3 "Knee Clearance"). Provide a clear floor space of at least **30" by 30"** in front. The top of the desk or work surface shall be between **28"** and **30"** from the floor.

10. Mini-theaters within a museum exhibit area: When the exhibit incorporates a short multimedia presentation, (such as a video) within a mini-theater that incorporates bench seating, space shall be provided for at least one visitor in a wheelchair. The space provided shall be a minimum of **36"** wide and **48"** deep. If the space can only be entered from the side, the space shall be **60"** deep. The space shall be located so as to provide an unobstructed view of the multimedia presentation.

11. Operable Parts of Interactive Exhibits:

A. Operable parts of mechanical interactive exhibits shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum. (ABAAS 309.4)

B. Push buttons for electrically-activated interactive exhibits or audiovisual programs shall be spaced a minimum of 0.7 inch from the center of one button to the closest edge of the next button. ("Hands-On Architecture, Access Board Research, Figure 2.2") Multiple buttons shall be arranged in either vertical or horizontal rows.

Exhibits Standards for Visitors with Visual Impairments

1. Tactile Exhibits:

   A. Examples: Tactile models and other touchable exhibit items should be used whenever possible. Examples of touchable exhibit elements include relief maps, scale models, raised images of simple graphics, reproduction objects, and replaceable objects (such as natural history or geological specimens, cultural history items, etc.).

   B. Placement of touchable, tactile models shall be in accordance with "Exhibits Standards for Visitors with Mobility Impairments"/"Touchable Exhibits"

2. Typography - Readability of exhibit labels by visitors with various degrees of visual impairment shall be maximized by using the following guidelines. Keep in mind that if one attribute is reduced, for example, lighting, then the other attributes must be increased to compensate for legibility -- like increasing the point size and/or contrast.

   A. Type size - **No** type in the exhibit shall be smaller than **24 point**. **<u>This includes photo captions.</u>**

   B. Typeface - The most readable typefaces should be used whenever possible, particularly for body copy. Some are: Times Roman, Palatino, Century, Helvetica, Frutiger, Rawlinson and Universe.

   C. Styles, Spacing - Text set in both caps and lower case is easier to read than all caps. Choose letter spacing and word spacing for maximum readability. Avoid too much italic type.

   D. Line Length - Limit the line length for body copy to no more than **45 to 50 characters per line**.

   E. Amount of Text - Each unit of body copy should have a maximum of **45-60 words**.

   F. Margins - Flush left, ragged right margins are easiest to read.

3. Color:

   A. Type/Background Contrast - Percentage of contrast between the type and the background should be a **minimum of 70%** .

   B. Red/Green - Do not use red on green or green on red as the type/background color combination, because of the largest colorblind group.

   C. Do not place body copy on top of graphic images that impair readability.

4. Samples: During the design process, **have samples made which are adequate** for review of all size, typeface, color, **and text/background** combinations for labels in that exhibit.

5. Exhibit Lighting:

   A. All text shall receive sufficient, even light for good readability. Exhibit text in areas where light levels have been reduced for conservation purposes should have a minimum of 10 footcandles of illumination.

   B. Harsh reflections and glare shall be avoided. This includes avoiding finishes for text panels which are highly reflective, such as glossy or metallic surfaces.

   C. The lighting system shall be flexible enough to allow adjustments on-site.

   D. Transitions between the floor and walls, columns or other structures shall be made clearly visible. Finishes for vertical surfaces shall contrast clearly with the floor finish. Floor circulation routes shall have a minimum of 10 footcandles of illumination.

6. Signage: When permanent building signage is required as a part of an exhibit project, the ABAAS guidelines shall be consulted. Signs which designate permanent rooms and spaces shall comply with ABAAS Table 703.5.5 "Visual Character Height". Other signs which provide direction to or information about functional spaces of the building shall comply with ABAAS guidelines as appropriate, such as signage for elevators and restrooms. Note: When the International Symbol of Accessibility (wheelchair symbol) is used, **the word "Handicapped" shall not be used** beneath the symbol. Instead, use the word "Accessible".

7. **Audio Description: Audio description of the museum exhibit as a whole is strongly encouraged. The audio description shall be in compliance with Section 508 of the Rehabilitation Act and should focus on the following, at a minimum:**

   A. Tell the story as already described in the exhibit text and images visually, in a form adapted to the audio media and its consequent time limitations.

   B. Describe and identify the artifacts, models, and other objects on display in cases, which cannot be touched by visitors.

   C. Provide instructions and interpretive information to enhance the visitor's experience while using tactile models or interactive exhibits.

   D. Provide audio description of video programs incorporated into the exhibits.

Exhibits Standards for Visitors with Hearing Loss

1. **All audiovisual programs incorporated into the exhibits shall be captioned to comply with Departmental Regulation 43 Part CFR 17, Subpart E.** Information presented via audio formats will be duplicated in a visual medium, such as in the exhibit label copy or by captioning. All video programs incorporated into the exhibit which contain **no** audio shall be identified with a label or caption which says "No Audio".

2. Amplification systems and volume controls shall be incorporated with audio equipment used individually by the visitor, such as audio handsets.

3. Information desks shall allow for Text Telephone (TTY) equipment.

4. All mini-theaters incorporated in museum exhibits which include an audio program shall include assistive listening devices.

Exhibits Standards for Visitors with Learning Impairments

1. The exhibits will present the main interpretive themes on a variety of levels of complexity, so they can be understood by people with varying abilities and interests.

2. The exhibits should avoid unnecessarily complex and confusing topics, technical terms, and unfamiliar expressions. Pronunciation aids should be provided where appropriate.

3. Graphic elements shall be used to communicate non-verbally.

4. The exhibits shall be a multi-sensory experience. Techniques to maximize the number of senses used in the exhibits should be encouraged.

5. Exhibit design shall use color and other creative approaches to facilitate comprehension of maps by visitors with directional impairments.

6. Audio Description: The text of the audio description should comply with items number one and two above and be presented in such a way that people with varying abilities can understand it. It needs to be consistent with the other interpretive media in terminology and themes. It should be well organized. It should focus on a limited number of key points and not confuse the listener with too much information.

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Historic Furnishings

Historically refurnished rooms offer the public a unique interpretive experience by placing visitors within historic spaces. Surrounded by historic artifacts visitors can feel the spaces "come alive" and relate more directly to the historic events or personalities commemorated by the park.

Accessibility is problematical in many NPS furnished sites because of the very nature of historic architecture. Buildings were erected with a functional point of view that is many times at odds with our modern views of accessibility.

The approach used to convey the experience of historically furnished spaces will vary from site to site. The goals, however, will remain the same, to give the public as rich an interpretive experience as possible given the nature of the structure.

Historic Furnishings Standards for Visitors with Mobility Impairments

1. The exhibit space should be free of architectural barriers or a method of alternate accommodation should be provided, such as slide programs, videotaped tours, visual aids, dioramas, etc.

2. All pathways, aisles, and clearances shall (when possible) meet standards set forth in UFAS 4.3 to provide adequate clearance for wheelchair routes.

3. Ramps shall be as gradual as possible and not exceed a 1" rise in 12" run, and conform with UFAS 4.8.

4. Railings and room barriers will be constructed in such a way as to provide unobstructed viewing by persons in wheelchairs.

5. In the planning and design process, furnishing inaccessible areas, such as upper floors of historic buildings, will be discouraged unless essential for interpretation.

6. Lighting will be designed to reduce glare or reflections when viewed from a wheelchair.

7. Alternative methods of interpretation, such as audiovisual programs, audio description, photo albums, and personal services will be used in areas which present difficulty for visitors with physical impairments.

Historic Furnishings Standards for Visitors with Visual Impairments

1. Exhibit typefaces will be selected for readability and legibility, and conform with good industry practice.

2. Audio description will be used to describe furnished rooms, where appropriate.

3. Windows will be treated with film to provide balanced light levels and minimize glare.

4. Where appropriate, visitor-controlled rheostat-type lighting will be provided to augment general room lighting.

5. Where appropriate and when proper clearance has been approved, surplus artifacts or reproductions will be utilized as "hands-on" tactile interpretive devices.

6. Audio descriptions will be provided for all AV programs relating to historic furnishings.

Historic Furnishings Standards for Visitors with Hearing Loss

1. Information about room interiors will be presented in a visual medium such as exhibit copy, text, pamphlets, etc.

2. Captions will be provided for all AV programs relating to historic furnishings.

Historic Furnishings Standards for the Visitors with Learning Impairments

1. Where appropriate, hands-on participatory elements geared to the level of visitor capabilities will be used.

2. Living history activities and demonstrations which utilize the physical space as a method of providing multi-sensory experiences will be encouraged.

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Publications

A variety of publications are offered to visitors, ranging from park brochures which provide an overview and orientation to a park to more comprehensive handbooks. Each park brochure should give a brief description of services available to visitors with disabilities, list significant barriers, and note the existence of TTY phone numbers, if available.

In addition, informal site bulletins are often produced to provide more specialized information about a specific site or topic. It is recommended that each park produce an easily updatable "Accessibility Site Bulletin" which could include detailed information about the specific programs, services, and opportunities available for visitors with disabilities and to describe barriers which are present in the park. A template for this site bulletin will be on the NPS Graphic Identity Program website for parks to create with ease, a consistent look throughout the park service. These bulletins should be in large type, 16 points minimum and follow the large-print criteria below.

Publications Standards for Visitors with Mobility Impairments

1. Park brochures, site bulletins, and sales literature shall be distributed from accessible locations and heights.

2. Park brochures and Accessibility Site Bulletins shall carry information on the accessibility of buildings, trails, and programs.

Publications Standards for Visitors with Visual Impairments

1. Publications for the general public:

   A. Text
      1. Size: the largest type size appropriate for the format. (preferred main body of text should be 10pt)
      2. Leading should be at least 20% greater than the font size used.
      3. Proportional letterspacing
      4. Main body of text set in caps and lower case.
      5. Margins are flush left and ragged right
      6. Little or no hyphenation is used at ends of lines.
      7. Ink coverage is dense
      8. Underlining does not connect with the letters being underlined.
      9. Contrast of typeface and illustrations to background is high (70% contrast is recommended)
      10. Photographs have a wide range of gray scale variation.
      11. Line drawings or floor plans are clear and bold, with limited detail and minimum 8 pt type.
      12. No extreme extended or compressed typefaces are used for main text.
      13. Reversal type should be minimum of 11 point medium or bold sans serif type.

B. Paper:
1. Surface preferred is a matte finish. Dull coated stock is acceptable.
2. Has sufficient weight to avoid “show-through” on pages printed on both sides.

2. Large-print version publications:

A. Text
1. Sizes: Title – 55 point; Introduction – 28.5 point; Text – 17.5 point; Headings – 22 point; captions – 16 point.
2. Leading: Text is 17.5 on 22pt. Introduction is 28.5 on 35 point. Captions are 16 on 20 point.
3. Proportional letterspacing
4. Main body of text set in caps and lower case.
5. Margins are flush left and ragged right.
6. Little or no hyphenation is used at ends of lines.
7. Two letter spaces at the end of a sentence.
8. One line space between paragraphs.
9. No indentations to delineate paragraphs.
10. Ink coverage is dense.
11. Underlining does not connect with the letters being underlined.
12. Contrast of typeface and illustrations to background: highest possible
13. Photographs have a wide range of gray scale variation.
14. Line drawings or floor plans are clear and bold, with limited detail and minimum 14 point type.
15. No extreme extended or compressed typefaces are used.
16. Sans-serif or simple-serif typeface, no italics, no decorative type
17. No oblique or italic typefaces
18. Use en dashes (longer) instead of regular hyphens in text.
19. Maximum of 50 characters (average) per line.
20. No type is printed over other designs.
21. Folds: keep as simple and easily understood as possible
22. Document has a flexible binding, preferably one that allows the publication to lie flat.
23. Gutter margins are a minimum of 22mm; outside margin smaller but not less than 13mm.

B. Paper:
1. Surface is off-white non-glossy.
2. Has sufficient weight to avoid “show-through” on pages printed on both sides.

3. Maps:
   A. The less clutter on the map, the more visitors that can use it.
   B. The ultimate is one map that is large-print and tactile.
   C. Raised line/tactile maps can be made using our present digital files and for example, a thermaform machine. Lines are distinguished by lineweight, color and height. Areas are distinguished by color, height, and texture.
   D. The digital maps are available on an accessible web site www.nps.gov/carto.
   E. Same paper guides as above.
   F. Contrast of typeface background is high. (70% contrast is recommended)
   G. Proportional letterspacing
   H. Labels set in caps and lower case
   I. Map notes are flush left and ragged right.
   J. Little or no hyphenation is used as ends of lines.
   K. No extreme extended or compressed typefaces are used for main text.
   L. Sans-serif typeface is used. Simple-serif typeface is used sometimes for a historic look.

4. The text contained in the park brochure shall also be available on CD or MP3 and accessible web site. Handbooks, and other publications shall be similarly recorded.

5. The official park publication is available in a word processing format. This shall be translated into Braille.

Publications Standards for Visitors with Hearing Loss

Park site bulletins will note the availability of such special services as sign language interpretation, captioned/audio description programs.

Publications Standards for Visitors with Learning Impairments

1. The park site bulletin should list any special services available to these visitors.

2. Publications:

   A. Use language that appropriately describes persons with disabilities.
   B. Topics will be specific and of general interest. Unnecessary complexity will be avoided.
   C. Whenever possible, easy to understand graphics will be used to convey ideas, rather than text alone.
   D. Unfamiliar expressions, technical terms, and jargon will be avoided. Pronunciation aids and definitions will be provided where needed.
   E. Text will be concise and free of long paragraphs and wordy language.

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Wayside Exhibits

Wayside exhibits, which include outdoor interpretive exhibits and signs, orientation shelter exhibits, trailhead exhibits, and bulletin boards, offer special advantages to visitors with disabilities. The liberal use of photographs, artwork, diagrams, and maps, combined with highly readable type, make wayside exhibits an excellent medium for visitors with hearing and learning impairments. For visitors with sight impairments, waysides offer large type and high legibility.

Although a limited number of NPS wayside exhibits will always be inaccessible to visitors with mobility impairments, the great majority are placed at accessible pullouts, viewpoints, parking areas, and trailheads.

The NPS accessibility guidelines for wayside exhibits help insure a standard of quality that will be appreciated by all visitors. Nearly everyone benefits from high quality graphics, readable type, comfortable base designs, accessible locations, hard-surfaced exhibit pads, and well-landscaped exhibit sites.

While waysides are valuable on-site "interpreters," it should be remembered that the park resources themselves are the primary things visitors come to experience. Good waysides focus attention on the features they interpret, and not on themselves. A wayside exhibit is only one of the many interpretive tools which visitors can use to enhance their appreciation of a park.

Please visit with Wayside Exhibit website for the following links:
www.nps.gov/hfc/products/waysides/way-process-access.htm

- NPS Wayside Exhibit Map Standards
- NPS Wayside Exhibit Typographic Standards

Wayside Exhibits Standards for Visitors with Mobility Impairments

1. Wayside exhibits will be installed at accessible locations wherever possible.

2. Wayside exhibit panels will be installed at heights and angles favorable for viewing by all visitors, including wheelchair users. For standard NPS low-profile exhibits the recommended height is 30" from the bottom of the exhibit frame to finished grade; for upright exhibits and bulletin boards the height is 24-28” from the bottom of the exhibit frame to finished grade, depending on panel size.

3. Trailhead exhibits will include accessibility advisory information.

4. Wayside exhibits will have level, hard-surfaced exhibit pads.

5. Exhibit sites will offer clear, unrestricted views of park features referred to in the exhibits.

6. In addition, the park should consider posting wayside content (excluding copyright material) on the park's website.

Wayside Exhibits **Standards for Visitors with Visual Impairments**

1. Exhibit typography will be legible and readable, according with the NPS Wayside Exhibit Typographic Standards.

2. Panel colors will be selected to reduce eyestrain and glare and to provide excellent readability under field conditions. Because of its reflectivity, white will not be used as a background color.

3. Selected wayside exhibits will incorporate tactile elements such as models, texture blocks, and relief maps.

4. Selected wayside exhibits will incorporate audio stations.

5. For all major features interpreted by graphic wayside exhibits, the park will offer non-visual interpretation (i.e. audio description) covering the same subject matter. Examples include audio tours such as digital audio players, radio systems or dial-up messages for cellular phone users, and ranger talks. In the spirit of Universal Design, we strongly encourage audio descriptions designed for the benefit of all visitors rather than a separate program.

6. In addition, park should consider posting wayside content on the park's website.

Wayside Exhibits **Standards for Visitors with Hearing Impairments**

1. Wayside exhibit panels will communicate visually and will rely heavily on graphics to interpret park resources.

2. Essential information included in audio station messages will be duplicated in written form, either as part of the exhibit text or in a publication.

Wayside Exhibits **Standards for Visitors with Learning Impairments**

1. Topics for wayside exhibits will be specific and of general interest. Unnecessary complexity will be avoided. Information will be presented in a clear hierarchical manner.

2. Easy-to-understand graphics will be used to convey ideas, rather than text alone.

3. Unfamiliar expressions, technical terms, and jargon will be avoided. Pronunciation aids and definitions will be provided where needed.

4. Text will be concise and free of long paragraphs and wordy language.

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Web Based Media

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Park Signage

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Glossary