Accommodation of Disabled Visitors at Historic Sites in the National Park System

Park Historic Architecture Division
Cultural Resources Management
National Park Service
U.S. Department of the Interior

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As the Nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under United States administration.

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DETAILED SURVEY CHECKLIST

Introduction

As many as seventeen percent of adult Americans—physically and mentally disabled individuals—have been unable to enjoy the National Park Service's historic sites to the fullest. For certain segments of the disabled population such as those in wheelchairs and those who walk with difficulty, the configuration of a historic site and its historic structures makes physical access to the site and structures, and interpretation programs difficult or impossible. For other disabled persons (i.e., those who are mentally disabled, deaf or blind), physical access is not a problem, but access to interpretation programs may be difficult or impossible because the programs were not designed with these disabled individuals in mind. In addition, those with limiting physical conditions of a temporary nature (such as a broken leg) and those who are limited in strength and agility as a result of the aging process would benefit from a more accessible environment.

This publication has been prepared to assist managers and technical staff in meeting an important, continuing goal of the National Park Service: giving disabled citizens the opportunity to share in the cultural, educational, and inspirational values embodied in the Park Service's historic sites. It is divided into two parts. The first serves as a guide to help managers understand the physical barriers that limit the enjoyment of the site by disabled visitors and describes some positive steps that can be taken. The second section is a manual for the specialists responsible for providing accommodation for disabled visitors.

Part 1 focuses on physical access to historic sites. It is an attempt to resolve the differences between the needs of physically disabled visitors and the need to preserve the historic integrity of Park Service sites and structures. The answer to resolving this difference is accommodation. Accommodation means all changes (architectural, administrative and interpretive) made for the benefit of disabled visitors.

The goal of the National Park Service is to provide visitors with the highest level of accommodation consistent with the primary mission of the Service and the authorizing legislation for various park historic sites with the least impact on the historic fabric.

When the highest level of accommodation cannot be achieved without significantly altering the historic fabric, other levels of accommodation, i.e., administrative or interpretive changes, may be the solutions of choice.

The chapters that follow in Part 1 contain information for understanding and dealing with accommodation and historic preservation. Chapters 1 and 2 deal with an overview of accommodation and basic information about disabled individuals. Chapter 3 deals with historic preservation and its implications. The manager's role and the legal context are discussed in Chapters 4 and 5. Chapter 6 presents some priority problem areas along with typical solutions.

Part 2 is designed to help the specialists who are responsible for providing accommodation for disabled visitors. This includes professionals such as historical architects, and specialists for the disabled, etc. at the parks, regional offices, Denver Service Center, Harpers Ferry Center, and the Washington Office. The Denver Service Center now has a specialist for the disabled on each geographic team. The roles of the specialists are explained; and the criteria that management decisions should be based upon are discussed.

Solutions to problems of physical accessibility are presented in Part 2 in greater detail using the same priority listing as in Part 1. In most cases, more than one option is given along with the advantages and disadvantages

of each option. Solutions are presented in this way because each site is different and there are a number of factors that will determine how disabled visitors should be accommodated.

A catalogue is included that lists the manufacturer of devices designed especially for disabled persons. There also is a bibliography for further reading.

There are many things that can be done to upgrade the accessibility of historic sites and structures, for at least some percentage of disabled individuals. Remember, the objective of the Park Service is to provide disabled visitors with the highest level of accommodation, i.e., free and independent access to the site and its facilities, where it makes the least impact on the historic fabric. Physical access is described in terms of two levels: STANDARD and BELOW STANDARD. As described in Part 1, Standard Physical Access incorporates the standards adopted by the General Services Administration (GSA) in its Federal Property Management Regulations. Below Standard Physical Access is *less* than the standards adopted by GSA and involves a judgment as to whether acceptable physical access is achieved.

Where physical access cannot be achieved according to one of the two levels described above, administrative changes and modified visitor interpretation programs should be considered.

Historic preservation is as important to disabled individuals as it is to everyone else. A spirit of commitment and the willingness to think creatively and explore all possible options can make the goals of accommodation and historic preservation work together for the benefit of all.

Brief Accessibility Checklist

A complete and comprehensive survey checklist is available in Part 2.

This checklist, however, is provided to give the reader an overview of the areas and features of a site which need to be accessible. It will be helpful for managers to use this checklist while making a brief survey of a site and its structures.

The brief survey will probably show many areas in need of improvement, thereby demonstrating why this publication can become important to the task of upgrading the accessibility of historic sites.

			Yes	No
Parking	Special Spaces	Reserved for disabled visitors?	___	___
		Extra-wide?	___	___
Walks	Paths of Travel	Level, paved or stabilized, wide enough for a wheelchair, free from curbs, steps and obstacles?	___	___
	Walkways	Level, paved or stabilized, wide enough for a wheelchair, free from curbs, steps and obstacles?	___	___
Entrance	Primary Entrance	Accessible to wheelchairs?	___	___
		Railings?	___	___
	Alternate Entrance	Accessible to wheelchairs?	___	___
		Railings?	___	___
Main Floor	Floors	Non-slip finish?	___	___
	Carpeting	Anchored securely?	___	___
	Doorways	Allow wheelchairs to pass through?	___	___
	Thresholds	Negotiated safely by wheelchairs and those with mobility impairments?	___	___
	Paths of Travel	Free from obstacles to wheelchairs and visually impaired people?	___	___
Other Floors	Stairways	Have railings which can be grasped for stability?	___	___
		Carpeted or otherwise free from projecting nosings (i.e., extensions of tread beyond risers)	___	___
	Other Access	Provided for those in wheelchairs?	___	___

Convenience Facilities	Toilet Rooms	Permit entry by wheelchairs?	___	___
		One wide toilet stall?	___	___
		Sink, mirror, soap and towel dispenser at height for wheelchairs?	___	___
		One low urinal for wheelchairs?	___	___
	Water Fountains	One low enough for wheelchairs?	___	___
	Telephones	One low enough for wheelchairs?	___	___
		Equipped with amplifying device for hearing impaired?	___	___
Elevators		Conform to modern specifications?	___	___
		Provide room for wheelchair and attendant?	___	___
		Controls within reach of those in wheelchairs?	___	___
		Controls marked with raised letters or standard symbols?	___	___
Warning Signals	Emergency Alarms	Both audible and visual?	___	___
	Doors leading to dangerous areas	Properly identified?	___	___
Identification	Signs	Large letters on contrasting background, raised or recessed and located within reach?	___	___
	Paths of travel	Indicated by International Symbol of Accessibility?	___	___
Visitor Interpretation	Exhibits	Generally able to be viewed from wheelchair?	___	___
		Appreciated by visually impaired persons?	___	___
	Recordings	Have amplifying device for hard-of-hearing visitors?	___	___
	Standard Verbal Interpretation	Information also available in written form (books or leaflets)?	___	___
	Written Visitor Information	Also available in simple terms for those with reading difficulties?	___	___
	Alternate Accommodation	Provided if physical access is not possible?	___	___
	Park Guide for Disabled Visitors	Available which describes facilities.	___	___

PART 1

CHAPTER 1 Accommodating physically disabled visitors: An overview

INTRODUCTION

Independent physical access for disabled visitors, that is, access without the assistance of others, while using the same facilities as non-disabled visitors is the *highest level* of accommodation. Any limitation of this exposure, or off-site alternative program is less desirable than touring the historic site in its entirety.

LEVELS OF ACCOMMODATION

Physical access can generally be achieved on two levels: STANDARD and BELOW STANDARD.

A. PHYSICAL ACCESS: THE HIGHEST LEVEL OF ACCOMMODATION

Standard Physical Access

The Administrator of General Services is required by law to establish standards for the design, construction, or alteration of buildings under the jurisdiction of the General Services Administration (which for this purpose, includes National Park Service buildings) to insure, whenever possible, that physically impaired persons will have ready access to, and use of, such buildings. Subpart 19.6 of Chapter 101 of Title 41 of the Code of Federal Regulations contains the standards which apply to all buildings owned by the Park Service or those under the jurisdiction of the GSA and used by the Service. (See Part 1, Chapter 4.)

Below Standard Physical Access

BELOW STANDARD is *less* than the standard adopted by GSA, or STANDARD level, and involves a judgment as to whether acceptable physical access is achieved. There is no standard for acceptability or reasonableness here. At this level, it is important to involve disabled staff or citizens to ensure that the level is acceptable. It is important to clearly demonstrate that this lesser standard provides a level of physical access which is acceptable in practice as well as in theory.

BELOW STANDARD applies only to historic sites and structures. Modern facilities should be made accessible according to the STANDARD levels.

EXAMPLE

To illustrate the two levels, consider the standards related to doors and doorways. The STANDARD width of a clear opening is 32 inches. Most wheelchairs are no wider than 27 inches. Electric wheelchairs or wheelchairs for large people may exceed this width. A space 27½ inches wide may allow most wheelchairs to pass through. However, another consideration is the space needed for the wheelchair user's hands as they propel the wheelchair.

The 27½-inch-wide doorway should be tested by having an individual try to propel himself by hand through the doorway in a standard wheelchair. If the BELOW STANDARD level is adopted here, visitors in wheelchairs may require assistance from staff or a companion in getting through the doorway.

B. ALTERNATE ACCOMMODATION: Administrative Accommodation

Where physical access cannot be achieved according to one of the two levels described above, managers may resort to administrative changes and modified visitor interpretation programs. Administrative changes can be defined as those actions which involve staff assistance, modified visitor patterns, the use of aids and devices, and special policies for disabled visitors.

Examples include:

—allowing individuals in wheelchairs to enter the building through an accessible non-public entrance;

—rerouting a tour for a disabled visitor so that a physical barrier (i.e., a narrow doorway) is by-passed;

—personally assisting disabled individuals over thresholds, helping individuals in wheelchairs up one or two stairs, (lifting and carrying individuals is not recommended for safety and liability reasons);

—furnishing a special narrow wheelchair for use by visitors if needed;

—using a modified vehicle to provide access to the grounds over gravel or uneven terrain;

—moving an exhibit to an accessible location at the site.

Accommodation Using Interpretive Materials

Managers should consider developing training programs on the physical needs of disabled staff or citizens. Local disabled persons can be a valuable resource during such training.

In some cases, full physical access cannot be achieved without significant damage to historic features. Alternate accommodation using interpretive materials allows the disabled visitor to experience inaccessible parts of the site through exhibits, audio-visual presentations, staff briefings and printed materials. On-site interpretive accommodation is always preferable to off-site alternatives since the disabled visitor remains integrated with other visitors. (Managers should refer to the NPS Interpretation and Visitor Services Guidelines [NPS-6] for additional information.) Accommodation may include, but is not limited to:

—providing pictures of inaccessible second floor rooms;

—developing an audio-visual presentation of the site and showing it in an accessible location;

—providing printed texts for audio presentations and/or movie subtitles for deaf persons or having available information similar to that presented in such interpretive presentations;

—providing braille materials or audio versions of written material.

Alternative accommodation using interpretive materials benefits all visitors. Accommodations described above may be of value to visitors with limited interest or energy. On the other hand, well developed preview programs about the upstairs of a building may tempt previously noninterested visitors to see the upstairs for themselves.

CHAPTER 2 Who benefits from accommodation

Every one benefits from an accessible environment to one degree or another. According to one estimate by the National Center for Health Statistics, thirty-five percent of Americans suffer from limiting physical conditions and would benefit from a more accessible environment. An additional ten percent (Americans over the age of 65 and limited in mobility as a result of the aging process) are not included in this estimate. These estimates do not include those who are temporarily disabled, obese, or those carrying small children.

When administrative accommodations or accommodations using interpretive materials are made, once again the population benefitting are not only disabled individuals, but elderly visitors, those who speak foreign languages and those with limited time and energy.

Quite often, when accommodations are made, non-disabled individuals find the site to be more convenient and pleasant to visit.

"In 1978, there were an estimated 127.1 million noninstitutionalized Americans aged 18-64. Of this 127 million, more than 21 million adults were limited to their ability to work due to a chronic health condition or impairment. In other words, 165 of every 1,000 adults were disabled."[1] Various estimates of the total population of disabled Americans range as high as 35 million.

Managers should make an affort to estimate the number of disabled visitors who use parks. Moreover, because disabled people have been limited in their enjoyment of historic sites in the past and because the geographic distribution of disabled individuals varies, managers should make local estimates of the number of potential disabled visitors. Representatives of disabled consumer organizations can assist with this process.

The following information describes the kinds of functional limitations distributed throughout the disabled population.

Total Mobility Impairments

This term, as it is used here, refers to persons who use wheelchairs. It is important to remember that many persons in wheelchairs have lost upper body movement as well as lower body movement.

The basic accessibility problems encountered by persons in wheelchairs include maneuvering through narrow spaces, going up or down steep paths, moving over unsmooth surfaces, making use of conventional toilet and convenience facilities, and reaching and seeing things placed at a conventional height. For those with upper body limitations, use of conventional controls (i.e., water faucet handles, doorknobs, etc.) is also an accessibility problem.

Partial Mobility Impairments

This term, as it is used here, refers to persons who walk with difficulty, do not have full use of their arms or hands, or who lack coordination. The kinds of impairments and their causes vary within this category but do include persons who use some mobility aid (i.e., crutches, braces), amputees, arthritic persons and those who may be partially paralyzed.

Managers should be aware of the problems partial mobility impaired persons have. They include walking, climbing steps or slopes, and standing for extended periods of time.

[1]Work Disability in the United States, U.S. Department of Health and Human Services, 1980.

Visual Impairments

This term, as it is used here, refers to persons who are totally blind, as well as those who have lost a significant degree of normal vision.

The basic accessibility problems for visually impaired persons include maneuvering past obstacles in a path of travel, going up or down steps, reading signs and printed materials, and understanding exhibits that can be seen, but not touched.

Hearing Impairments

This term, as it is used here, refers to persons who are totally deaf, as well as those who are hard of hearing.

The basic accessibility problems for hearing impaired persons include understanding audio presentations, communicating with site personnel.

Learning Impairments

Included here are mentally retarded individuals, those with learning disabilities and others who have difficulty comprehending written or spoken material. Managers should be aware of the need to modify interpretive materials, signs and visitor instructions so that they are simple and direct.

Other

Managers should be aware of other impairments which are site specific such as claustrophobia and acrophobia (fear of heights). At Perry's Victory and International Peace Memorial, for example, the largest group of visitors unable to use the Memorial Column are those who have a fear of heights.

CHAPTER 3 Values of historic structures

The Park Service has a statutory obligation to locate, identify, evaluate, preserve, manage, and interpret significant historic structures in every park in a way that they may be handed on to future generations unimpaired. This obligation is spelled out in federal laws, an Executive Order, and Park Service management policies and guidelines which are summarized in Part 1, Chapter 5.

After learning about the levels of accommodation for disabled visitors, it is important to understand the limitations on alteration and use of historic structures that are imposed by these laws and policies and how these limitations apply to accommodation of disabled visitors.

NPS *Management Policies,* dated 2-78, indicates that protection of historic fabric and contents, and public safety take precedence over the use of a historic structure. In order to protect historic fabric or provide public safety, the use of the structure must be changed or limited if there is a conflict.

Given the requirements of historic preservation and limitations imposed for reasons of safety, managers have an important task of assessing the significance of each historic structure in order to understand the accommodation options which should be considered. Management policies require that no structure be significantly altered without professional evaluation by the concerned regional cultural resources specialists (regional historical architect, regional historian, regional archeologist) of its historic, architectural and archeological value using the National Register criteria. Proposed alterations to National Register eligible structures must also comply with the "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800) promulgated by the Advisory Council on Historic Preservation.

There are a number of factors that should be taken into account when considering independent physical access to historic structures or administrative and interpretive accommodation. There is no formula for using the following factors. Instead, they must be evaluated in as objective a manner as possible. Most importantly, managers should be prepared to indicate why a particular factor was considered important and how it affected a recommendation or decision.

Each structure at a site must be evaluated separately, because structures at a historic site may differ in their historic significance and thus be treated differently when accommodations are made.

Significance

The List of Classified Structures (LCS) identifies all historic structures including those that meet the criteria of the National Register of Historic Places.

Those structures that are listed in the National Register as individually possessing national significance should receive the greatest protection from alteration or loss. Structures of less than national significance may allow greater flexibility when making physical changes to achieve accommodation

When judging just how amenable to modifications various structures are, managers should evaluate the structures in terms of their reason for significance. A historic structure's reason for significance defines why it should be preserved and aids in determining how accommodation can be accomplished. The National Register nomination form's statement of significance should be consulted to confirm

the reason for significance of the structure.

The installation of a permanent ramp at the front entrance of a structure preserved primarily as an example of period architcture may be a major intrusion. On the other hand, if a structure contains the workplace of a famous person, then access to the workplace may be essential to enjoyment of the resource, and a ramp may be justified at an appropriate entrance.

Thus, there may be a difference as to the aspect of the structure that accounts for the significance.

Managers should ask such questions as:

—Must a visitor enter the structure to enjoy its value?

—Are all rooms or locations in the structure equally important?

—Must historic objects be enjoyed in their original setting to gain full appreciation of their value?

—Does the structure have intrinsic architectural value, or is it valuable primarily because it houses a particular collection, or commemorates an important event?

Treatment

A structure that has been preserved entirely in its original condition should be treated with care and respect. Continued preservation may preclude irreversible physical accommodations or those accommodations which jeopardize future preservation. For example, regrading a site around an entrance may cause damage to the walls or foundation of a building.

Where the exterior of a structure has been preserved, but the interior has been subjected to adaptive use, there are more options available when achieving access within the structure. Modern toilet facilities in such structures should be made accessible according to the STANDARD level.

In some cases, a portion of a structure was added after the period which established the structure's historic significance. In such cases, this more recent addition may allow more options for accommodation, because it is not as essential to portraying the architecture of the historic period. In other cases, the addition may be essential to showing the evolution of the use of the structure over a longer historic period.

Use or Function

When a historic structure serves as a visitor center, then it is especially important to provide access for disabled people. Such visitors may rely on visitor center facilities such as toilets, drinking fountains and telephones. In addition, it may be necessary to gain access to a structure to enjoy an interpretive program and to obtain assistance from Park Service staff. Where visitor centers are provided in inaccessible locations of a structure, and it is not desirable to alter the structure, serious consideration should be given to moving the visitor center to another location.

If on the other hand, the structure is the reason for significance and it is used strictly as a house museum, e.g., Lincoln's Home, preservation is essential and alterations should be avoided. This may not, however, preclude reversible physical accommodations or portable means of accommodation such as ramps.

Yearly Visitation

Accommodations at a site that is visited by 500,000 visitors will likely benefit more disabled individuals than accommodations at a site with a visitation of 50,000. Generally, however, such popular sites are more significant and must be carefully preserved.

As indicated in Part 1, Chapter 2, managers are encouraged to estimate the potential number of disabled individuals who might visit a site. This will give some idea of how many visitors will be affected by a particular accommodation decision.

Location

Where there is a cluster of historic structures in the same locality, one particular structure's inaccessibility may be offset by the accessibility of others in the area. This causes managers to consider structures in relation to their surroundings. If two comparable house museums are located in the same city, it may be acceptable to make accommodations at one structure and keep the other intact to show the difference in treatment.

Example

Lincoln Home NHS in Springfield, Illinois illustrates the interplay of these factors. The Park consists of Lincoln's Home, several houses which add to the historic scene, including the Corneau House, and a modern visitor center. The home, faithfully preserved through generations, must be preserved and maintained. A historic structure of such importance and unquestioned reason for significance must be treated with extreme care. Consistent with this, little physical access has been provided for visitors in wheelchairs, i.e., ramps, lifts, or elevators. Such accommodations would constitute a major intrusion on the historic scene, jeopardize historic fabric, and detract from the experience of all visitors.

The Corneau House, which ultimately will be diagonally across the street from the Lincoln Home, is not as significant. Its exterior will be restored and its interior will be adapted as a special meeting and interpretive facility. This house which adds to the historic scene is able to be adapted for use by disabled visitors, because it does not possess as much significance. Accommodations at this structure will give disabled visitors an idea of the community in which Lincoln lived.

The visitor center is not historic and is accessible at the STANDARD level.

The entire complex receives high visitation annually and the Home is in danger of damage, so much so that serious consideration is being given to limiting the number of visitors. Because of the visitor center and the ultimate use of the Corneau House as a special meeting and interpretive facility, alternate interpretive accommodation is a viable alternative to physical access to all visitors.

Thus, we see that accommodation varies with the significance, treatment, use, and visitation of a structure. How these factors interrelate and affect accommodation of disabled visitors is a matter of judgment. Such a judgment should be made carefully and in consultation with the regional cultural resources specialists and the Advisory Council on Historic Preservation .

CHAPTER 4 Manager's role

Park Service managers play a central role in accommodating disabled visitors. This chapter presents some recommended steps that should be taken to accomplish this task effectively.

RECOMMENDED ACTIONS DURING NATIONAL PARK SERVICE PLANNING PROCESSES

A. INCLUDE ACCOMMODATION IN PLANNING DOCUMENTS

General Management Plan (GMP)

The GMP should include objectives in the visitor use section for adapting facilities for use by disabled people and involving interested community representatives.

Development Concept Plan (DCP)

The DCP should include all preliminary plan concepts for the disabled individuals and identify those structures which could provide physical access for an alternate level of accommodation.

The Interpretive Prospectus (IP)

The IP should address general methods of accommodation and methods of interpretation that meet the needs of various disabled visitors. Individuals with learning, hearing and vision impairments should be included in addition to those with mobility or coordination disabilities.

B. INCLUDE ACCOMMODATION IN ACTION DOCUMENTS

The Historic Structures Report (HSR)

The HSR should specifically address accessibility. It should be used to assess the impact of proposed accommodations on the historic fabric.

Construction Documents (CD)

Working drawings, specifications and contract documents should specify solutions for accessibility.

RECOMMENDED ANALYSIS PROCEDURES FOR ACCOMMODATION

A. CLASSIFY THE HISTORIC SITE

Part 1, Chapter 3 discusses some factors which should be used to classify the historic site. The factors are: significance, treatment, use or function, visitation, and location. Managers should evaluate the site according to these factors to understand the constraints placed by historic preservation on accessibility. Staffing should also be considered here to understand the alternatives which may be available for administrative and interpretive accommodation.

B. SURVEY THE SITE

This involves a systematic tour of the historic structures and site. The tour identifies physical barriers which affect disabled visitors. It should be done by managers as the first action step in evaluating accommodation.

Some key actions to be performed here are:

- survey the site following the order of a typical tour;
- invite disabled employees or other persons to accompany you to obtain their perspective;
- distinguish between modern features and historic features of a site.

A Detailed Survey Checklist is included in the pocket in the back of this publication for use by managers and specialists when conducting this thorough evaluation.

C. BE AWARE OF TYPES OF PROBLEMS WHICH MAY ARISE

After surveying the site, it is important to understand the type of problems presented at the site prior to attempting to accommodate disabled visitors.

Category 1 Simple Problems—No Major Impact

This category includes those minor barriers where the possible solutions present no negative impact on the site (i.e., no destruction of historic fabric; minimum visual intrusion). The changes may be reversible and accomplished without long and involved planning. Quite often, the barriers can be removed by the maintenance staff at modest cost. Examples of such barriers include sidewalk curbs, curbs along the path of travel, parking areas without reserved parking, high drinking fountains and telephones, and one or two steps at a visitor entrance. Such problems could likely be addressed by modifying non historic aspects, such as a city sidewalk, by lowering modern features, or by providing ramps and other assistive devices.

Remember that modern visitor facilities, where modification does not affect the historic fabric, should be modified to conform to the current GSA standards.

Category 2 Moderate Problems—Some Impact

Actions to remove certain barriers may affect the historic fabric physically or visually. Solutions to such barriers may involve building alterations, site modifications, and installation of nonhistoric materials or devices. The changes are often reversible.

Examples of CATEGORY 2 problems are:

- three or more steps at an entrance;
- the lack of external railings;
- inaccessible toilet facilities in a historic building;
- narrow or uneven walks;
- narrow entrances and doorways;
- high thresholds.

Some remedial action possibilities include:

- installation of mechanical lifts;
- regrading of certain portions of the site;
- installation of modern railings;
- modification of toilet stalls and fixtures;
- modification of moldings and thresholds.

Once a CATEGORY 2 problem is identified, consultation with the Regional Historical Architect should follow to assess the impact of alternative accommodation strategies on the historic site. Staff of the Denver Service Center may also assist.

Category 3 Serious Problems—Major Impact

This category includes problems which may require major building alterations and structural modifications which, in turn, may result in destruction of historic fabric or significant visual intrusion. Examples of CATEGORY 3 problems are:

—the installation of a new or larger elevator in a building;

—installation of a major external elevator;

—permanent ramping;

—removal of structural walls in a toilet room;

—widening of a doorway

Solutions to these problems require extensive investigation and analysis by the Regional Historical Architect and/or Denver Service Center staff. Specific review is required before any such actions are undertaken.

Administrative and interpretive solutions to architectural barriers may be considered in place of physical modification. These alternatives will be discussed briefly in Part 1, Chapter 6.

D. OBTAIN THE ADVICE OF EXPERTS

Regional Historical Architects and staff of the Denver Service Center are available to assist managers in researching accessibility problems, developing alternative strategies and evaluating each strategy. Part 2 is available to provide background information and guidance on evaluating strategies. The staff of the Harpers Ferry Center is also available to assist managers with visitor interpretation alternatives to accommodation. Disabled employees of the Park Service or disabled visitors can provide valuable advice in defining problems and in suggesting practical solutions. Another source of expert advice is disabled consumer organizations which usually have staff members who are knowledgeable about accessibility. An advisory panel composed of disabled individuals can also serve as an ongoing source of information.

E. CONSIDER ALL ALTERNATIVE SOLUTIONS

The key to accommodating disabled individuals is consideration of all alternatives.

In the case of a site with multiple steps at a main visitor entrance, consideration of alternate entrances may be necessary. The following decision diagram describes a series of questions which might be asked. A YES answer indicates a solution, while a NO answer requires that the next option be considered.

F. EVALUATE ALTERNATIVES

Each alternative should be evaluated using the same criteria:

—benefit to disabled visitors, or accommodation benefit;

—effect on historic fabric;

—impact on NPS staff;

—time required to make changes;

—possible safety hazards;

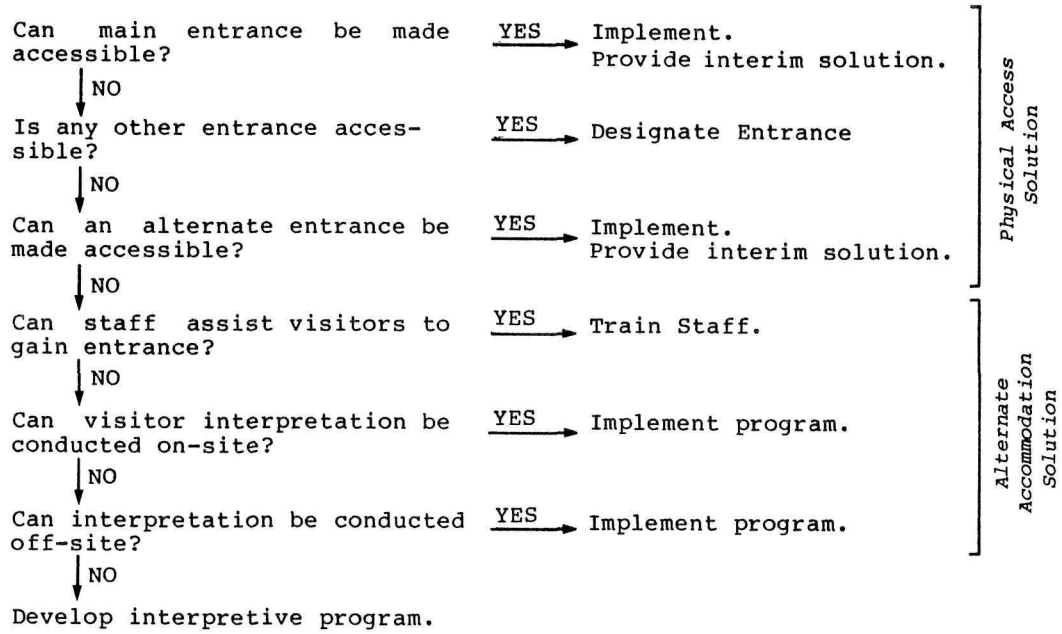
—cost.

Because there is no formula for evaluating each alternative according to the criteria, it is important to make notes which explain the basis of the evaluation. Part 2 includes an Accommodation Worksheet for use in recording the evaluation.

G. JUSTIFY AND DOCUMENT RECOMMENDED SOLUTIONS

Managers should be prepared to justify why a particular solution was chosen, expecially if the solution involves alteration or destruction of historic fabric. Construction documents should also be prepared, by historical architects, which specifically document solutions.

Decision Diagram



H. OBTAIN APPROVALS, IF NECESSARY

Proposed solutions which involve alteration or destruction of historic fabric will require Section 106 review as prescribed by the "Procedures for Protection of Historic Properties" as promulgated by the Advisory Council on Historic Preservation.

I. IMPLEMENT FINAL SOLUTION

This involves final planning, budgeting, and supervision as work is being done.

J. IMPLEMENT INTERIM SOLUTIONS

While actions to accomplish final solutions are planned and budgeted, it is important to develop interim solutions which provide temporary or partial access to the maximum extent feasible.

Temporary physical accommodations might include replacing a door to a toilet stall with a curtain, installing a cup dispenser next to a high water fountain, fabricating a wooden ramp over a step, or placing a secure carpet runner over a threshold.

Temporary administrative solutions such as providing assistance to visitors who walk with difficulty, changing the sequence of a tour, or rerouting the path of travel can be effective.

Modest interpretive measures may also be considered such as providing photographs of inaccessible areas, having park guides brief disabled visitors, and providing displays of furniture or equipment at an accessible visitor center.

K. PUBLICIZE ACCOMMODATIONS THAT HAVE BEEN MADE

It is important to inform visitors about the existence of accessible facilities and accommodations that have been made. Each historic site should possess a park guide for disabled visitors which lists accessible structures and their entrances, toilets, water fountains, telephones, and other visitor facilities. If accommodations are not provided on site, visitors should be referred to nearby public facilities which are accessible.

In the past, many disabled individuals have avoided historic sites because they assumed that the sites were inaccessible. Managers should modify park brochures to comment on accessibility, post the international symbol of accessibility to indicate accessible areas, and inform the public of accommodations. Publicity can include newspaper articles and notices to disabled consumer and service organizations.

CHAPTER 5 The legal and administrative context of accommodation and accessibility

BASIC ACCOMMODATION AND ACCESSIBILITY PROVISIONS

This chapter summarizes the laws, regulations, and policies which pertain to historic preservation and accommodation of the needs of physically disabled persons at historic sites. A more detailed summary of these mandates, together with analysis is in an Appendix.

The Architectural Barriers Act of 1968 (Public Law 90-480, as amended)

This law affects buildings intended for use by the public and those buildings which may involve use by physically handicapped individuals as employees or residents. Specifically, buildings or facilities constructed or altered, leased, or financed through a grant or loan made by the United States since August 12, 1968, are addressed by the statute. The Administrator of General Services, in consultation with the Secretary of Health and Human Services, is required to establish standards for the design, construction, or alteration of buildings to insure, whenever possible, that physically handicapped persons will have ready access to, and use of, such buildings. The design, construction, or alteration of any such building after August 12, 1968 must be in accordance with these standards.

Federal Property Management Regulations, "Accommodations for the Physically Handicapped" (41 CFR Subpart 101-19.6)

Subpart 19.6 of Chapter 101 of Title 41 of the Code of Federal Regulations implements Public Law 90-480, The Architectural Barriers Act of 1968, as described above. These provisions apply to all federal agencies and instrumentalities, as well as to non-Federal entities insofar as the Act provides. Specifically, the regulations address buildings constructed, or altered by or on behalf of, the Federal government after September 2, 1969. Thus, addressed by these regulations are all buildings owned by the National Park Service or those under the jurisdiction of the General Services Administration used by NPS.

When the Park Service alters a historic site, the alterations must be made in accordance with the minimum standards set forth in the regulations, unless certain exceptions are applicable. An alteration, according to the regulations, "means repairing, improving, remodeling, extending, or otherwise changing a building," (41 CFR 101-19.602[5][b]). Any departure from the applicable standards is permissible where equivalent accessibility and usability of a building may be achieved by other methods (41 CFR 101-19.603). The standards do not apply if the alterations are to areas not intended to be accessible to the public or to handicapped individuals. The standards also do not apply to the alteration of a building if the alteration "does not involve the installation of, or work on, existing stairs, doors, elevators, toilets, entrances, drinking fountains, floors, telephone locations, curbs, parking areas, or any other facilities susceptible of installation or improvements to accommodate the physically handicapped." In addition, the alteration need not be made if the application of the standards would be structurally impossible (41 CFR 101-19.604[a] to [c]). The applicability of the standards may be modified or waived on a case-by-case basis upon application to GSA by the Director of the National Park Service, and a subsequent determination by the Administrator that such modification or waiver is clearly necessary (41 CFR 101-19.605).

The Rehabilitation Act of 1973, (Pubic Law 93-112, as amended)

The Rehabilitation Act of 1973 mandates a broad range of services and sets forth certain basic rights for handicapped individuals. Section 502 of the Act establishes the Architectural and Transportation Barriers Compliance Board (A&TBCB). One function of the Board is to hold hearings and issue orders it deems necessary to ensure compliance with the standards prescribed by GSA and other Federal agencies. The Board is authorized to withhold or suspend funding in connection with any building not found in compliance with applicable architectural standards.

Section 504 of the Act guarantees specific rights in Federally funded programs and activities to persons who quality as "handicapped." This law requires all recipients of Federal funds—whether in the form of a grant or a contract—to review, and if necessary, modify their programs and activities so that discrimination based on handicap is eliminated. Federal executive agencies and the U.S. Postal Service must also eliminate discrimination based on handicap in their programs and activities, including employment.

NPS MANAGEMENT POLICIES

The 1978 *Management Policies* demonstrate the commitment of the National Park Service to comply with Public Law 90-480 and other applicable laws and regulations. Chapter III of the *Management Policies* states:

> To the greatest extent possible, commensurate with their physical limitations, the handicapped should be able to enjoy the park using the same facilities as the non-handicapped visitor. Special interpretive facilities and programs for handicapped people are encouraged where good potential for participation is indicated.

HISTORIC PRESERVATION

In addition to the NPS "Organic Act" and the legislation establishing Park Service units, other legislation mandates the preservation of historic sites.

The National Historic Preservation Act of 1966 (Public Law 89-665, as amended)

The National Historic Preservation Act, as passed in 1966 with important amendments in 1980, has established a program for the preservation of historic properties throughout the nation. The act authorizes the Secretary of the Interior to expand and maintain the National Register of Historic Places, establishes the Advisory Council on Historic Preservation, recognizes the role of state historic preservation officers and accelerates the Federal commitment to aiding non-Federal efforts to preserve historic sites. The act requires Federal agencies to locate, inventory, and nominate eligible properties for inclusion in the National Register and to exercise caution to assure that properties that might qualify for inclusion are not inadvertently demolished, substantially altered, or allowed to deteriorate significantly. Section 106 of the Act requires that the Advisory Council on Historic Preservation be provided an opportunity to comment on proposals affecting properties on the National Register. Regulations implementing Section 106 also require agency officials to consult with the state historic preservation officers in the identification of properties on or eligible for listing on the National Register, as well as determining the effect of an action on a National Register property.

Executive Order 11593

Executive Order 11593, May 13, 1971, strengthened the Federal government's overall commitment to historic preservation. It required Federal agencies to preserve, restore, and maintain historic sites "for the inspiration and benefit of the people . . .," and to inventory their properties for possible placement on the National Register of Historic Places. The basic provisions of the Executive Order were adopted in 1980 as amendments to the National Historic Preservation Act.

The mandate for historic preservation is further established and implemented in certain other laws, policies, and memoranda which are listed in the Bibliography.

HISTORIC PRESERVATION AND ACCOMMODATION

The respective mandates for historic preservation and accessibility for physically handicapped people are strong and specific. Nowhere does the intent of one mandate contradict the other. However, the implementation of these mandates may be difficult. Nevertheless, contemplated actions to upgrade accommodation for disabled visitors which may result in intrusion on the historical characteristics of a building may require management to exercise flexibility and creativity to arrive at an equitable solution. The following information in Part 1 focuses on a number of ways in which the greatest accommodation benefit can be achieved with the minimum intrusion.

Where disabled visitors cannot readily enjoy the park using the same facilities as the nondisabled visitor, even with all possible accommodations, managers may have to resort to a modification or waiver process. This process requires careful study and consultation with NPS regional and Washington Office officials. Waiver and modification requests should be employed only when all other alternatives have been considered and rejected.

CHAPTER 6 Priority problems and typical solutions

The following areas of a historic site are particularly important because they control access to the site or because they concern the physical well-being of visitors.

Primary Areas
Access to:
1 the building
2 the main floor
3 toilet facilities
4 the site

Secondary Areas
Access to:
5 other floors
6 parking
7 drinking fountains
8 telephones

Typical problems connected with each of these areas are discussed below with some typical accessibility, administrative, and interpretive solutions. The numbers assigned above are for ease of reference and do not necessarily reflect an order of importance within primary and secondary areas.

PRIMARY AREAS

1. ACCESS TO THE BUILDING

Most historic buildings have steps at the main entrance. The more elegant buildings (governmental, religious, educational) have many steps and impressive railings to enhance their prestige. Modest buildings have entrances with at least one or two steps, no platform at the top, and often no railings. At the front door, there may be one step to the door in combination with the threshold. Such features are essential to the aesthetic effect of the building, and as such, preserving the features and minimizing visual intrusion is of the utmost importance.

The Derby House, at Salem Maritime NHS, erected in 1761, presents a typical entrance to a private house. Note the four front steps and the absence of railings.

Entry to the Derby House

Entry for mobility-impaired persons to the Derby House is best accomplished through the rear kitchen entrance, which is at ground level and has no steps. Tours involving mobility-impaired visitors should start at the back entrance.

If an alternate entrance were not available here, a portable ramp would be preferable because of the small number of shallow stairs and the problem of visual intrusion at the front entrance.

Typical Accessibility Problems:
Even one step is a barrier to a person in a wheelchair.

Typical Assessibility Solutions:
Portable or fixed ramp.

Vertical or inclined lift.

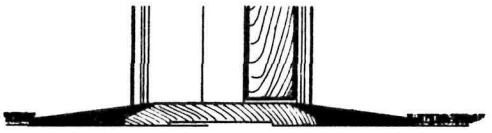
Regrade area around entrance.

The lack of railings or their design can present safety problems for most persons with mobility and visual impairments.

Install handrails.

Typical Accessibility Problems:
High thresholds present barriers for those in wheelchairs, a tripping hazard for those who walk with instability, and problems for those with visual impairments.

Typical Accessibility Solutions:
Add bevels to the sides of a threshold.



Narrow doors, heavy doors that require more than 15 pounds of pressure to open, and high or difficult to manipulate hardware may present additional problems.

Replace hinges with offset hinges of similar design to provide wider clear opening.

Adjust door closers.

Replace round door knob with lever handle or door pull, or add a lever attachment.

Typical Administrative Solutions:
Direct disabled visitors to alternate accessible entrance.

Have staff assist visitors up steps, open doors, help people over thresholds and push wheelchairs through doorways.(Staff should *not* attempt to lift persons, but provide assistance only.)

Typical Interpretive Solutions:
Develop a display which depicts the site and locate in an accessible visitor center.

Develop an audio-visual presentation of the inside of the building and show it at an accessible location at the site.

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2. ACCESS TO MAIN FLOOR

Some historic houses were designed with narrow center hallways. Unless wheelchairs can pass through other wider doorways, such a narrow opening presents a difficult accessibility problem.

Larger buildings typically have wider hallways and doorways. Thresholds may be a barrier and slippery floors a hazard for certain disabled people.

Access to the entire first floor of the Derby House can be accomplished by rerouting disabled visitors through other doorways which are wider and connect all rooms. The rooms are usually roped off, but exceptions can be made for disabled people.

If wider doorways were not available, a visitor interpretation program depicting inaccessible areas could be located in the kitchen which is accessible by the rear entrance.

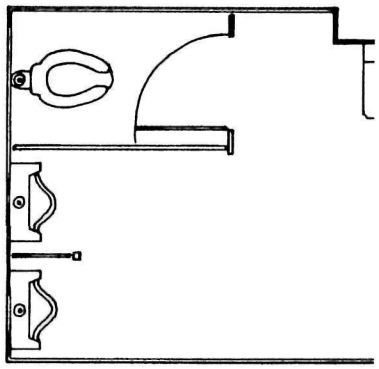
The Derby House has both a narrow hallway and doorway, typical features of an 18th-century colonial residence.

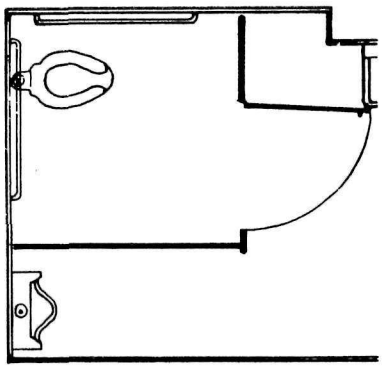
Typical Accessibility Problems:	Typical Accessibility Solutions:
Narrow hallways and corridors may be scratched by wheelchairs attempting to negotiate turns.	See typical administrative solutions.
Narrow doors may not allow wheelchairs to pass through.	Remove doors at problem areas. Replace existing door hinges with offset hinges of same style. Provide narrow wheelchairs (± 23½ inches) for visitors to use, as appropriate.
High thresholds.	Add beveled material or remove thresholds before carpeting.
Slippery floors are a hazard to all visitors, especially those who walk with instability.	Install nonslip floor mats or runners over slippery floor.
Carpeting with long loose pile, thick padding, or carpeting not securely anchored is a hazard for everyone.	Install carpeting that is thin, dense, and securely anchored with thin padding.
Signs that are too high, protrude into the path of travel, or are difficult to read affect visually and mobility impaired visitors.	Remove or relocate protruding signs; lower signs where necessary. Signs must have good color contrast and large, raised or recessed letters.
Any step or change in level is a barrier to a wheelchair.	Place portable ramps over steps.

Typical Administrative Solutions:	Typical Interpretive Solutions:
Ask staff to push visitors in wheelchairs through narrow hallways, corridors, doorways, over thresholds. Reroute disabled visitor traffic through wider doorways and hallways. Ask staff to assist those in wheelchairs or those who walk with instability up few steps where ramp is not feasible. Allow individuals in wheelchairs to enter roped-off areas or to look through narrow doorways.	Develop an audio-visual presentation which depicts inaccessible areas of the building and locate it near the accessible entrance. Create a display or album which contains pictures of inaccessible rooms and have staff available to explain if necessary.

3. ACCESS TO TOILET FACILITIES

Few toilet facilities at historic sites are part of the historic fabric. Modern toilet facilities should be made fully accessible (see sketch). If the public toilet is part of a historic building, space must be made for a wheelchair to enter the room, maneuver, and enter one toilet stall. In some cases, such modification may require enlarging toilet rooms. This may result in unacceptable impact on adjacent areas.





These before and after sketches show how two standard stalls can be made into one large stall which is wheelchair accessible.

Typical Accessibility Problems:
Narrow entrance doors may not allow those in wheelchairs to enter the toilet room.

Narrow toilet stalls do not permit those in wheelchairs to enter, maneuver, and transfer to toilet seat.

High urinals are not usable by people in wheelchairs.

High mirrors, soap and towel dispensers at sinks are difficult or impossible to use from wheelchairs.

Grab bars are seldom provided.

Vanity partitions at the entrance to a toilet room may restrict access to the room for those in wheelchairs.

Typical Accessibility Solutions:
Widen doorway and install a wider door.

Replace entry door hinges with offset hinges of same style.

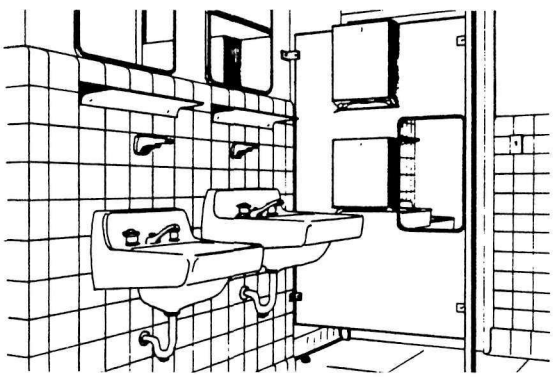
Move or eliminate a toilet partition to widen the area around the toilet. A privacy curtain provides a temporary solution if a partition is removed or until a door to the stall is provided.

Lower one urinal or install an additional lower one.

Lower mirrors, soap and towel dispensers at sinks. If sink has legs, install wall-mounted sink.

Install grab bars in the toilet stall.

Remove vanity partitions and lock door so that toilet room may be used privately.



An accessible toilet room. Note the lowered sink, towel dispenser and mirror.

Typical Administrative Solutions:
Create one accessible private lavatory with thumb-turn lock for use by men and women where permitted.

Designate an accessible staff toilet for use by individuals in wheelchairs.

Refer people in wheelchairs to the nearest accessible public facilities.

4. ACCESS TO THE SITE

Access to the site involves getting from the parking area to the visitor entrance. Many historic sites have curbs, steps, narrow walks, with loose or uneven surfaces and steep slopes. With the possible exception of curbs, these features are historic and modification might cause damage to the feature or serious visual intrusion.

Access to the Longfellow House is best accomplished using a driveway and small parking area located to the left of the house. Spaces in the parking area could be reserved for disabled individuals.

The House at Longfellow NHS in Cambridge, Massachusetts seems inaccessible from the street. Note the curb, long brick walk and steps up to a terrace at this Georgian mansion.

Typical Accessibility Problems:	**Typical Accessibility Solutions:**
Curbs at the street are barriers.	Install a curb ramp in the path of travel.
Steps are wheelchair barriers.	Install removable ramps over steps. Railings should be added to ramps over more than one step.
Narrow walks are a hazard to crutches and wheelchairs.	Place removable board walk with non-slip surface over narrow and uneven surfaces.
Cobblestones, gravel or other loose, uneven surfaces are hazardous to mobility-impaired persons.	Adapt a golf cart or other vehicle to transport individuals in their wheelchairs over steep or uneven terrain.
	Remove and replace existing walkway material to achieve a more uniform pathway.
Obstacles may be present in the path of travel.	Remove obstacles.

Typical Administrative Solutions:

Reroute visitor traffic around steps, curbs, steep or uneven surfaces, and obstacles. Appropriate signs or staff assistance should be provided.

Allow mobility-impaired visitors to disembark as close to entrance as possible.

Provide staff assistance to help people in wheelchairs up curbs, few steps and over steep or uneven surfaces.

Typical Interpretive Solutions:

Create an interpretive program, i.e., audiovisual presentation at the visitor center or other accessible location.

5. ACCESS TO OTHER FLOORS

Without an elevator, accessibility alternatives for persons in wheelchairs are very limited. Stairs can be modified to some degree for those who walk with instability.

Typical Accessibility Problems:
Stairs present a serious barrier for those in wheelchairs.

Low railings, railings on one side only, and discontinuous railings present hazardous conditions for those who walk with instability or visually impaired persons.

Projecting nosings (steps where tread extends beyond riser) are a hazard to those who use crutches.

Typical Administrative Solutions:
Ask staff to assist individuals up stairs.

Typical Accessibility Solutions:
Install an elevator.

Install a chair lift over the stairs.

Add a handrail.

Modify existing railings.

Carpet stairs.

Install bevels attached to riser.

6. ACCESS TO PARKING

Parking lots need only slight modification to accommodate disabled visitors. Such change rarely affects historic features.

Typical Accessibility Problems:
No reserved spaces near the accessible entrance to each building.

Narrow or standard spaces do not permit a wheelchair to enter and disembark from a car.

Insufficient number of accessible reserved spaces.

Typical Administrative Solutions:
Allow individuals with mobility impairments to disembark as close to the entrance as possible.

Typical Accessibility Solutions:
See Typical Administrative Solutions.

Use the International Symbol of Accessibility to reserve special spaces.

Rearrange spaces to provide special 13-foot-wide or 9-foot-wide spaces which share a common 4-foot aisle.

Use adjacent walkways as disembarking areas.

Add more reserved parking spaces as needed.

7. ACCESS TO DRINKING FOUNTAINS

If provided, drinking fountains or coolers must be usable by all, including short people and those in wheelchairs.

Most drinking fountains are not wheelchair accessible and cannot be made so. Merely lowering a wall-mounted unit does not make it accessible, because the bottom of the cooler prevents a person from wheeling close enough for use.

Typical Accessibility Problems:	Typical Accessibility Solutions:
High drinking fountains do not permit use by visitors in wheelchairs.	Remove and replace with drinking fountain designed for use by those in wheelchairs.
	Add proper wheelchair drinking fountain adjacent to existing fountain.
Button-type controls are difficult for those with hand and arm impairments to operate.	Install a cup dispenser beside inaccessible fountain (interim solution).
	Change button controls to lever handles on both sides.

Typical Administrative Solution:
Have staff assist disabled visitors in getting water.

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8. ACCESS TO PUBLIC TELEPHONES

If provided, public telephone service must be available to all.

Typical Accessibility Problems:	Typical Accessibility Solutions:
Phones with a coin slot greater than 54 inches from the floor are difficult or impossible to use for those in wheelchairs.	The telephone company will lower the telephone for a service charge.
A telephone without an amplifying device may be unusable for visitors with hearing impairments.	The telephone company will install an induction coil to augment hearing aids.

CONCLUSION

Reading Part 1 is the first step for management and technical staff who are responsible for providing accommodations to disabled visitors.

By now, it should be clear that there are levels of accommodation. When a solution to an accessibility problem cannot achieve a STANDARD or BELOW STANDARD level of accommodation without intruding upon the historic fabric, then an administrative or interpretive solution will become the solution of choice.

Before any choices are implemented, however, it is important to consult Part 2 of this publication.

PART 2

CHAPTER 1 The specialists' role in accommodation

The specialists play an important role in assisting Park Service managers to upgrade accommodations for disabled visitors. As described in greater detail below, this role consists of assessing the historic significance of the features and accessibility problems of the site and structure; developing creative or alternative solutions to problems; and recommending a course of action to managers. If construction is indicated, the historical architect will develop construction documents, coordinate the award of the contract, and supervise construction.

The historical architect has a thorough understanding of the historic significance of the features of the site and structure and can recommend actions to allow disabled individuals to experience the site and structure and its interpretive program in as integrated a setting as possible. The preferred goal of accommodation is to provide disabled people access to the site using the same entrance(s), path of travel, interpretive programs, and other visitor facilities as able bodied visitors. In many cases, alterations which could be made at a modern facility will be incompatible with historic preservation. Other alternatives must be sought, such as minor alterations which are reversible, temporary modifications or the addition of devices to assist disabled people.

During the development of alternatives for a major treatment project, it is essential for a Denver Service Center Historical Architect and specialist for the disabled to work closely with the Regional Historical Architect and Regional Chief of Interpretation. The Denver Service Center Historical Architect and the Regional Historical Architect are key figures in proposing physical accessibility solutions to accommodation and evaluating the level of access (STANDARD or BELOW STANDARD) that would be achieved. Historical Architects are also responsible for assessing the impact of a particular accessibility solution on the historic fabric and answering such questions as:

—Might permanent destruction of historic fabric be involved?

—Is the solution reversible?

—Is a visual intrusion involved?

—Is the solution in keeping with sound design principles and the Historic Structure treatment standards in the Cultural Resources Management Guidelines (NPS-28)?

—Does it limit accessibility for non-disabled visitors, i.e., path of travel and visitor flow?

—Are there safety considerations?

—What is the likely cost and time required for implementation?

The Regional Chief of Interpretation and Harpers Ferry Center staff can suggest changes in the interpretation program which enhance the enjoyment of the historic site by disabled individuals. In addition, interpretive planners can recommend alternate accommodations to be made if physical access cannot be achieved or is incomplete, i.e., access to the first floor, but not the second.

The emphasis during such accommodation should be placed on what *can* be done, both in the long and short run. A design solution which will take extensive planning, budgeting, and development work should accompany a plan of action which provides some accommodation in the near future. The Regional Chief of Interpretation once again, can play a vital role in designing practical programs which allow disabled individuals to experience the site and its story while modifications are implemented.

A sample series of steps to achieve accommodation is described below. This should be used as a general guide to action and not as strict instructions.

RECOMMENDED STEPS TO ACHIEVE ACCOMMODATION

1. PLANNING

During the development of the General Management Plan, Development Concept Plan, and the Interpretative Prospectus, the site should be surveyed using the Brief Accessibility Checklist and objectives set. Some simple solutions should be implemented immediately. Others should be planned for and programmed funds allocated for future development.

2. ACTION

Historic Structure Report (HSR)

During preparation of a Historic Structure Report for proposed treatment is the time to address specific accommodation for disabled persons. When the historic features are identified and assessed, the historical architect should note the status of accessibility. Recommendations concerning preservation, restoration or reconstruction should include ways of upgrading accessibility.

Classify the Site

It is important to classify and evaluate the site according to several factors:

a. Significance.
b. Treatment.
c. Use or Function.
d. Yearly Visitation.
e. Location.
f. Staffing.

Detailed Survey of the Site and Structures

During the planning process, the park manager will use the Brief Accessibility Checklist to identify major problems. The specialists will then be called in to study the problems further, develop alternative solutions, and recommend actions. It is essential that the specialists survey the site and structures in detail to gather information and confirm the initial assessment by the park manager. The Detailed Survey Checklist provided in the pocket in the rear of this publication should be used for this purpose. The checklist is designed to assess each feature of the site and structure according to the two levels of standards, STANDARD or BELOW STANDARD, but affording some accessibility. The STANDARD level is defined in Chapter 3.

The determination of BELOW STANDARD (less than legal minimum) involves a judgment of what works. Part 2, Chapter 2, "Functional Limitations of Physical Disabilities," contains important information about the functional limitations of physical disabilities, and methods for making and documenting decisions. This information (plus experimentation with wheelchairs and other devices) will be very helpful in determining what does work.

The objective here is to achieve the highest level of physical access with the least impact on the historic features. The appropriate level will vary according to whether the structure is being altered or preserved and if a feature is historic or nonhistoric. If the structure is in a stable condition and accommodations are contemplated in the context of preservation, then the objective is to obtain at least minimum access. If this is not feasible, then partial access should be attempted or alternate accommodation provided.

Evaluate the Results of the Survey

By examining those questions which were answered NO, the specialist should be able to get a feel for the major accessibility problems. It is helpful in this regard to list the inaccessible portions of the site on a sheet of paper in the order that they appear in the checklist.

The next important step is to define accessibility problems and list them in order of priority.

It is important when stating an accessibility problem to make it broad enough to encompass several barriers of the same type. Thus, a problem might be stated "Entrances to buildings are inaccessible to individuals in wheelchairs," rather than "Front entrance is inaccessible" or "Side entrance is inaccessible." This permits a consideration of several optional ways of allowing disabled individuals to enter the site. The problem should also be stated in terms which are specific and can be solved.

Listing problems in order of priority involves a determination of a sequence of events; the population of disabled people affected by the problem; and some thought about the pri-

mary needs of people. Since the checklist areas are presented in the order in which one would tour the site and structure, they suggest that certain barriers must be overcome before others are reached. One should not address the problem of a narrow doorway until the problem of the narrow hallway leading to the door is addressed.

This process will result in a tentative list of major problems in order of priority. Barriers that can be removed easily need not be included in a final list of priorities because they should be removed as soon as possible. This list should be reviewed by the park manager. The specialists and the manager should work together in consultation with the regional cultural resources specialists in the determination of actions to be taken.

List and Evaluate Alternative Solutions for Each Priority Problem

The Accommodation Worksheet in Part 2, Chapter 4 is provided for this purpose. It assists the specialists in evaluating each solution according to the criteria of accommodation benefit, effect on the historic features, cost, time, impact on NPS staff, safety, and other factors. It assists in making an objective rating according to certain criteria, and allows another individual to review the evaluation process which the specialists went through in coming to certain conclusions. Part, 2, Chapter 5, entitled, "Typical Solutions to Typical Problems," will assist in defining optional solutions. It is to be looked upon as suggesting common solutions and not as an exhaustive list of every option. Much rests on the creativity of the specialists here in defining solutions which provide accommodation and preserve the historic features. Many solutions are situational and exist because of certain unique features of the site and structures.

Recommend Favorable Solutions and Implementation Steps

The development of a plan for accommodation will likely be a joint process with the park manager, specialists, and the regional cultural resources specialists. The Regional Chief of Interpretation and staff from the Harpers Ferry Center will be involved here if the solution(s) involve changes in the interpretive program.

Once solutions are decided upon, an implementation plan should be developed. In many cases, this will involve design development, construction drawings, specifications, and contract procedures. In other cases, the process will not involve building alteration, but will require budgeting. In any case, it is important to focus on *both* long and short range actions.

CHAPTER 2 Functional limitations of physical disabilities

In order to accommodate disabled visitors, it is important to have some knowledge about the *functional* limitations distributed throughout the population of disabled people. Familiarity with the limitations and needs of disabled visitors will, at the very least, put standards and specifications into a human perspective.

The following pages give an overview of the four general categories of disabilities, what conditions are included in each category, and what functional limitations are shared by persons in each category. See the Bibliography for sources of additional information about disabilities.

PARTIAL MOBILITY IMPAIRMENTS

This term, as it is used here, refers to all persons who walk or use their arms or hands with difficulty, insecurity, or lack of coordination. This may include persons who:

—use crutches;
—use braces;
—use braces and crutches;
—use special shoes;
—are pregnant;
—have emphysema;
—have palsy;
—have amputations (with or without prosthetic limbs);
—have had a stroke;
—have sprains, fractures, or broken bones;
—have heart disease;
—have arthritis.

FUNCTIONAL LIMITATIONS

The kinds of partial mobility impairments and their causes vary within this category of disabilities. However, there are common limitations shared by persons with partial mobility.

Some of the considerations in understanding the functional limitations of those with partial mobility impairments are:

Walking: A person who has difficulty walking, for whatever reason, may lose balance and fall when the surface is not smooth, not firm, or is slippery. For example: a foot that drags or has no sensation cannot react to an obstacle in time to prevent an accident.

Climbing: Climbing, whether it be stairs or a steep path, can pose various problems which include:

—maintaining balance if no handrails are present (or handrails are too low);

—tripping over a projecting nosing;

—inability to raise a leg over a high step;

—loss of breath or feeling of dizziness if there is nothing to hold onto for rest.

Stamina:

Most persons with partial mobility impairments tire easily. In some cases, this is because they use more energy in walking and standing. In other cases, this is because they are in a weakened state.

Thirst:

Many persons require frequent drinks of water. This may be attributable to a particular disease or condition, the medication for a disease or condition, and to the level of energy required to perform certain physical activities.

Dexterity:

If a person's arm or hand is paralyzed, arthritic, weak or numb, or if an arm or hand is missing, there will be difficulty in manipulating something that is heavy, intricate, or requires grasping to operate.

TOTAL MOBILITY IMPAIRMENTS

This term, as it is used here, refers to persons *who use wheelchairs.* Very simply, people use wheelchairs because they cannot walk. There can be many reasons for this. An accident, disease, or genetic defect affecting the spinal column, neuro-muscular system, or certain parts of the brain can result in the loss of lower-limb mobility.

In many cases, a person in a wheelchair has a lack of mobility in other parts of the body.

Some of the ways a person may be affected include:

—loss of movement or feeling in the lower extremities;

—loss of movement and feeling in the lower extremities and lower torso;

—loss of movement and feeling in lower extremities, torso and upper extremities;

—loss of movement from the neck down;

—uncontrolled movement, ranging from the extremities to the entire body, including the face.

FUNCTIONAL LIMITATIONS

The functional limitations among people in wheelchairs vary greatly. The largest determining factor is the degree of lost mobility. (When visiting a historic site, a person who lost lower limb movement is at a greater disadvantage than a person who has only lost manual dexterity.)

The following are some considerations in understanding the functional limitations of persons in wheelchairs.

Getting Around:

For all practical purposes, a person in a wheelchair can do only what a wheelchair can do: *wheelchairs don't climb.* When the wheels (or foot rests) of a wheelchair meet an obstacle (even a rise of one inch), the wheelchair stops. A certain amount of strength is required to push over any abrupt rise in elevation. Many people do not have this strength

The dimensions of a wheelchair are a very important consideration for getting around. The average width of a wheelchair is 27 inches. When a wheelchair is not automatic (and most are not) the average width of a wheelchair, plus the elbow extension of the person is 30 inches. The above figures are averages. An electric wheelchair, a wheelchair fitted for an obese person or one with special attachments may be as wide as 30 inches.

In addition to requiring a certain width for moving from one place to another, a wheelchair requires a certain amount of space for making a 360 degree turn. This is approximately a 60 inch diameter.

Seeing:

Because a person in a wheelchair is in a seated position, the eye level is considerably lower than the general population. Anything that should be seen at eye level and is higher than 40 inches is inappropriately placed for a wheelchair user.

Reaching: Being in a seated position also affects the arm reach of a person in a wheelchair. The average vertical reach does not exceed 54 inches; diagonal reach does not exceed 48 inches.

Dexterity and Strength: When a person's upper extremities are affected, the ability to push (doors, etc.), manipulate (hardware, levers, etc.) or handle (brochures, tickets, etc.) may be limited entirely or partially.

VISUAL IMPAIRMENTS

A visual impairment may be caused by a disease, accident, or genetic defect of the eye or certain parts of the brain. A gradual loss of sight often accompanies old age.

Severe visual impairment can be explained further by describing the different kinds of sight experienced by visually impaired persons. These differences include:

—sight within a narrow field (tunnel vision);

—sight out of one corner of an eye;

—fuzzy sight;

—sight of forms and shapes;

—perception of light only.

FUNCTIONAL LIMITATIONS There are varying degrees and kinds of sight that make visually impaired persons different from one another. The type of sight loss, the age of onset, the quality of special education received, and the level of personal adjustment will affect an individual's ability to function.

The following are some important considerations in understanding the functional limitations of visually impaired persons:

Perception: Eighty percent of visually impaired individuals retain some degree of sight. Therefore, visually impaired persons rely on sight as much as possible. In most cases, this residual sight is useful when the person stands closer to something than a normally sighted person.

In absence of sight, totally blind persons see with their senses of touch and hearing.

Reading: Many visually impaired persons can read printed matter if the print is 18 point or higher. A sign can often be read if the letters are 4 inches high in light colors on a dark background. Only 10 percent of blind persons read Braille.

Getting Around: People who have been blind for some period of time usually receive orientation training. This enables them to walk in straight lines and follow clear directions.

HEARING IMPAIRMENTS

The human ear is a delicate and complex organ. A disease, accident, or birth defect affecting one or more parts of the ear, can result in a hearing impairment. A gradual loss of hearing is also part of the normal aging process.

The following classifications are based upon the degree of hearing loss in the speech range.

Slight loss: Difficulty in hearing whispered speech.

	Difficulty in hearing distant speech, soft speech, and speech mixed in with other noises.	**Moderate loss:**
	Difficulty in hearing speech unless the voice level is raised, the distance is short, and no other noises are present.	**Marked loss:**
	Difficulty in hearing speech even if it is shouted.	**Severe loss:**
	Difficulty in hearing the sound of the voice no matter how high the level of sound.	**Profound loss:**

FUNCTIONAL LIMITATIONS

When a person's hearing is impaired, the ability to communicate and to learn is also impaired. For specialists concerned with physical accessibility, the important thing to remember is that anything designed only to be heard, such as a fire alarm bell, will be ineffective for many hearing impaired persons.

CHAPTER 3 Surveying the site

Part 2, Chapter 1 discussed the specialists' role. Under "Recommended Steps to Achieve Accommodation," a detailed survey of the site and its structure was suggested.

This is an important task because it will show how each section of the site is connected to another. Wherever a barrier appears during a tour of a site and its structure, the tour may be impossible (or very difficult) for disabled visitors to complete.

Making a survey of a site is the link between planning and taking action. In one sense, it will be the culmination of the planning research. In another sense, it will be the first step in deciding what changes may be made at a structure.

The survey is not a very difficult task. It involves little more than a complete and systematic tour of the structure and surrounding site. This tour will establish what barriers exist at a site and how these barriers affect a disabled visitor.

In addition, the survey will give insight that will prove very useful when establishing priorities for barrier removal.

The following information outlines a properly made survey.

Checklist

Use the Detailed Survey Checklist (in the pocket in the back of this publication) as a tour is being made. The checklist will serve as a guide to identifying possible barriers, and will serve as a record for what is found.

As much as possible, the checklist attempts to follow the order of a typical tour. However, some things about sites cannot be anticipated in a general checklist. For example, the location of toilets, telephones, and water fountains will vary from site to site.

Public Involvement

The existence of barriers (and certainly the importance of barriers) is not always apparent to an able-bodied person. Therefore, the assessor should invite a disabled person to make the tour during the assessment.

For best results, a person in a wheelchair and a blind person should be invited to go along on the tour. Also, problems should be discussed with other disabled persons. Barriers to disabled people in general will be readily identified.

When to Make the Assessment

Assess the site when it is open to the public. A site with many people around will set the scene for a more accurate assessment. The assessor will have a clearer picture of how traffic flow and staff assistance contribute to experiencing the tour.

CHAPTER 4 Accommodation worksheet

The attached worksheet should be used to analyze different solutions to major accessibility problems that you have already defined. The criteria listed will help you evaluate each solution in a systematic manner. Criteria should be added if they apply.

To the right of each criterion, jot down a few notes which characterize how well the solution meets the criterion. The terms Asset (+), Liability (−) and Not Applicable (NA) are suggested to help you summarize your rating. Place a (+), (−) or (NA) in the upper right corner of each. It is also important to note that this analysis does not involve a numerical rating, but the process should be as objective as possible. The relative importance of each criterion will have to be determined along with which solution(s) is best. The worksheet basically helps to organize and document the assessment and allows another person to understand why you made a particular accessibility recommendation.

DESCRIPTION OF WORKSHEET ITEMS

Accommodation Problem

It is important when stating an accessibility problem to make it broad enough to encompass several barriers of the same type. Thus, a problem might be stated "Entrances to buildings are inaccessible to individuals in wheelchairs," rather than "Front entrance is inaccessible," or "Side entrance is inaccessible." This permits you to consider several optional ways of allowing disabled individuals to enter the structure. The problem should also be stated in terms which are specific and can be solved.

Proposed Solutions

List all reasonable solutions to the stated problem.

PRIMARY CRITERIA

Accommodation Benefit

This primary criterion addresses the benefit which disabled individuals will gain from the solution. It contains two elements:

Most Integrated Setting Appropriate

This element concerns the extent to which disabled individuals can enjoy the site and its facilities in the same setting or manner as an "able-bodied" individual. This means disabled people should enter through the main visitor entrance rather than through a back door which is used only by disabled individuals, and would be considered unacceptable by an able-bodied person.

Disability Populations Benefitted

This element considers the nature of the disability, i.e., mobility, vision, hearing, learning, etc., and addresses how disabled individuals will benefit from the solution.

Effect on Historic Features Benefit This primary criterion addresses the effect of the proposed solution on the historic features. The notion of reversibility is an important aspect of this criterion.

SECONDARY CRITERIA

Cost Cost to achieve the solution.

Time Time needed to achieve the solution.

Impact on NPS Staff The extent to which staff will be needed to supervise, provide assistance, administer, etc.

Safety The implication of the solution on emergency exit, fire regulations, visitor and staff liability, etc.

Other Considerations These include maintenance, vandalism, intrusion on other visitors, etc.

ACCOMMODATION WORKSHEET

HISTORIC SITE: _____

ACCOMMODATION PROBLEM: _____

EVALUATOR _____ **Date** _____

	1	2	3	4
PROPOSED SOLUTIONS				
ACCOMMODATION BENEFIT				
EFFECT ON HISTORIC FEATURES				
COST				
TIME				
IMPACT ON NPS STAFF				
SAFETY				
OTHER				
SUMMARY				
RECOMMENDATION				

CHAPTER 5 Typical solutions to typical problems

This chapter follows the format of Part 1 of this publication, that is, priority problem areas and typical solutions are presented in terms of primary areas and secondary areas.

These are:

Primary Areas
Access to:
1 the building
2 the main floor
3 toilet facilities
4 the site

Secondary Areas
Access to:
5 other floors
6 parking
7 drinking fountains
8 telephones

Typical solutions are presented for each problem along with the advantages and disadvantages of each solution. Administrative and interpretation alternatives to physical access are addressed also in Part 1.

PRIMARY AREAS

1. ACCESS TO THE BUILDING

Often, the purpose of coming to a historic site is to visit the historic structure at the site. Therefore, the first priority ought to be finding a way for all visitors to get into a structure easily and safely.

The most desirable solution to any accessibility problem is one that is permanent and does not segregate disabled visitors.

In most cases, making a front entrance accessible to persons in wheelchairs will significantly alter the appearance of the structure. Therefore, it may be best to examine an alternate entrance. Alternate entrances often present fewer problems of accessibility; and making them accessible will be less damaging to the historic appearance of the structure and less intrusive.

Most entrances are made up of many parts, i.e., steps, platforms, doors, and thresholds. Any one of these parts may be a barrier or a hazard to many disabled visitors.

A. Steps.

PROBLEM: One or more steps are a barrier to visitors in wheelchairs.

Typical Solutions	Advantages	Disadvantages
Install a *permanent (reversible) ramp* from grade to floor level.	Is a permanent solution. Eliminates the need for staff assistance. Requires little maintenance and maintenance cost.	Is an intrusion on the historic scene. Takes up a great deal of space at a slope of 1 in 12 (a 24-inch rise requires a 24-foot ramp). Is expensive—cost varies with number of steps.

Typical Solutions	Advantages	Disadvantages
Provide a *portable ramp.*	Is less expensive than a permanent ramp.	Is not practical for more than four steps—ramp would be too heavy to be portable.
	Has less effect on historic appearance.	Requires staff assistance when moved to and from entrance.
	Requires little maintenance and cost.	Requires storage space.
	May be left in place.	Can be heavy and cumbersome.
		Is likely to be steeper than a permanent ramp, thus may require staff assistance to push wheelchairs up and down ramp.
		Usually is made without railings.
Install a *vertical lift* from grade to floor level.	Is a permanent solution.	Is an intrusion on the historic scene.
	Takes up less space than a permanent ramp.	Requires some kind of shelter or cover to protect parts.
	Is practical to about 6 feet of vertical rise.	Requires staff assistance to operate.
	Is a reversible solution.	Requires maintenance.
		Is expensive.
		Requires a 5 foot by 5 foot level platform between lift and entrance door.
		Is subject to vandalism.
		Is subject to mechanical failure.
		Is subject to electrical failure.
Install an *inclined lift* from grade to level platform.	Is a permanent solution.	Is an intrusion on the historic scene.
	Takes up little space.	Requires staff assistance to operate.
	Is a reversible solution.	Is expensive.
		Requires a 5 foot by 5 foot level platform between lift and entrance door.

Typical Solutions	Advantages	Disadvantages
		Is subject to mechanical failure and maintenance. Is subject to electrical failure. May be a hazard to other visitors.
Install an *exterior elevator* from grade to each floor level.	Is a permanent solution. Allows access to each floor level. Does not affect structural members.	Is an obvious visual intrusion. May result in destruction of historic fabric—requires cutting a doorway into building at each floor. Is expensive. May disturb interior plan of building. Is not a reversible solution.
Regrade land over *steps.*	Is a permanent solution. Is a reversible solution. Eliminates the need for staff assistance. May not be a visual intrusion.	Is generally not practical for more than two steps. Takes up a great deal of space. (To overcome a 12-inch rise, an area of over 300 square feet is required to provide a rise of not more than 1 in 20.) May change appearance of entrance and historic scene. Involves a change in the site, which is also historical. May introduce problems related to moisture and insects.

PROBLEM: *High steps* may be a barrier to visitors with mobility impairments.

Typical Solutions	Advantages	Disadvantages
Install new *steps.*	Is a permanent solution. Minimizes the need for staff assistance. May be reversible.	Is expensive. Does not accommodate wheelchairs.

B. Railings.

PROBLEM: *Unrailed steps or improperly railed steps,* i.e., one railing, low railings, wide railing, may be a barrier or a hazard to visitors with visual impairments and those who walk with instability.

Typical Solutions	Advantages	Disadvantages
Install *permanent handrails* at each side of steps.	Is a permanent solution.	Is a visual intrusion.

Typical Solutions	Advantages	Disadvantages
	Is relatively inexpensive.	Anchoring holes in steps and building may damage fabric and be irreversible.
	Can be designed to blend with present architecture if desired.	May present design problem—particularly on short runs, i.e., 2 or 3 steps.
	Allows independent access.	May not be as secure as a permanent handrail.
Install *free standing handrails* at each side of steps (anchored in adjacent ground, not attached to structure).	May be a permanent solution.	May not be as attractive as a permanent handrail.
	Minimizes need for staff assistance.	
	Avoids damage to historic fabric.	
	Is a reversible solution.	
Install *free standing newel posts* where there are only a few steps.	May be a permanent solution.	Is not as effective as a handrail.
	Minimizes need for staff assistance.	
	May blend in better with architecture than a handrail.	
	Is a reversible solution.	

C. Platforms. **PROBLEM: *Small or sloped platform* (an area adjacent to a doorway that is not level or large enough to accommodate a wheelchair) is a barrier.**

Typical Solutions	Advantages	Disadvantages
Widen *platform.*	May be a permanent solution.	Changes historic appearance.
	Eliminates need for staff assistance.	May not be effective if platform is not deep enough.
		Is expensive.
		Is not a reversible solution.

D. Doors and Doorways. **PROBLEM: *Narrow Doorway* (a doorway with a clear opening of less than 27 inches wide) is a barrier to most visitors in wheelchairs or visitors using crutches. A doorway 27 to 29 inches wide can be a barrier to those in wide wheelchairs. A doorway less than 32 inches wide may make independent access difficult or impossible.**

Typical Solutions	Advantages	Disadvantages
Replace present door and frame with a *wider door frame.*	Is a permanent solution.	Changes historic proportions.
	Eliminates need for staff assistance.	May involve damage to historic fabric.
	Can be made to look like former door.	Is a modern addition.
		Is expensive.
		Is not a reversible solution.

Typical Solutions	Advantages	Disadvantages
Replace hinges with *offset hinges* of similar design to provide wider clear opening.	May be a permanent solution. Eliminates need for staff assistance. Is inexpensive. Is a reversible solution.	Door must swing 180 degrees to be effective. Is a modern addition. Increases door opening by thickness of door only.

PROBLEM: ***Heavy and/or quick closing door*** **(a door that requires more than 15 pounds of effort to open and/or a door that closes automatically, and doesn't stay open long enough) is a barrier for visitors in wheelchairs and those with mobility impairments.**

Typical Solutions	Advantages	Disadvantages
Adjust *closer*.	May be a permanent solution. Is cost free. Eliminates need for staff assistance. Is a reversible solution.	May not eliminate problem. May affect latching of door.

E. Door Hardware.

PROBLEM: ***High or difficult to operate hardware*** **(a door with hardware that is higher than 42 inches and requires dexterity and manual strength to operate) is a barrier to visitors in wheelchairs and to many with mobility impairments.**

Typical Solutions	Advantages	Disadvantages
Replace round door knob or thumb-latch with *lever handle* or *door pull*.	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive.	May change historic appearance.
Add a *lever attachment* to a round door handle.	Is a permanent solution. Eliminates need for staff assistance. Is inexpensive. Is a reversible solution. Does not require the removal of hardware.	

F. Thresholds.

PROBLEM ***High threshold*** **(an unbeveled threshold more than one-half inch high, or a beveled threshold more than three-quarter inches high) is a barrier to visitors in wheelchairs and hazardous to those with mobility and visual impairments.**

Typical Solutions	Advantages	Disadvantages
Remove *threshold* (not applicable for exterior door).	Is a permanent solution. Eliminates the need for staff assistance.	Leaves space at bottom of door.

Typical Solutions	Advantages	Disadvantages
	Is inexpensive. May be reversible.	May change historic appearance.
Plane threshold to make it lower.	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive.	Changes historic appearance of threshold. Leaves a space at bottom of door. Is not a reversible solution.
Added *bevels* to both sides of threshold.	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive. Is a reversible solution.	Changes historic appearance. Is not practical if a step is adjacent to threshold.
Install a new *beveled threshold.*	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive.	Changes historic appearance. May not be reversible.

2. ACCESS TO MAIN FLOOR

The purpose of entering a historic structure is to enjoy whatever is inside. Several elements of the main floor may be a barrier or a hazard to disabled visitors. They include interior doors, thresholds, floor surface, and paths of travel.

	Typical Solutions	Advantages	Disadvantages
A. Interior doors and Doorways: ***See Doors and Doorways, item 1D.***	Remove door.	Is reversible. Can be implemented quickly. Is inexpensive.	May affect historic appearance. Increases clear opening by thickness of door only.
B. Interior Thresholds: ***See Thresholds, item 1E.***	Place *carpeting* over beveled threshold.	Protects threshold.	Door may not close properly. Carpeting will wear out more rapidly.

C. Path of Travel. **PROBLEM: *Obstacles* that protrude or hang down into a path of travel may be hazardous to blind visitors and those in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Remove obstacles.	Allows independent access.	May change historic appearance and/or destroy fabric. May affect interpretive program.

Typical Solutions	Advantages	Disadvantages
For hanging or wall mounted obstacles, place an object on the floor below the obstacle to warn blind visitors.	May minimize hazard for blind visitors. Allows independent access.	May cause further obstacle for other visitors.
Place an audible flasher where objects protrude or hang down.	Is a permanent solution. Eliminates need for staff assistance.	Requires that visitors be aware of flasher's meaning.

PROBLEM: *Slippery floors* are a hazard to visitors who walk with instability. **D. Floors.**

Typical Solutions	Advantages	Disadvantages
Apply *non-slip finish* to floors, where possible.	May not affect appearance of floor. Is relatively inexpensive. May be reversible.	May be ineffective.
Carpet floors with high density, low pile carpeting without padding.	Is a permanent solution. Eliminates wear to original flooring. Is relatively inexpensive. Is a reversible solution.	Is a modern addition.
Place *non-slip runners* in path of travel.	Is a permanent solution. Eliminates wear to original flooring. Is less expensive. May allow original flooring to be seen. Is a reversible solution.	Is a modern addition.

PROBLEM: *Thick carpeting* (any carpeting that is made of thick pile) causes difficult travel for visitors in wheelchairs.

Typical Solutions	Advantages	Disadvantages
Remove padding.	May be a permanent solution. Eliminates staff assistance. Requires only labor cost. Is a reversible solution.	May make carpet wear out. Carpet may still cause difficulty.
Install *new carpeting* with thin padding.	Is a permanent solution. Eliminates staff assistance. Is a reversible solution.	May be expensive.

PROBLEM: ***Unanchored Carpeting*** **is a hazard for those with visual impairments or individuals who walk with instability.**

Typical Solutions	Advantages	Disadvantages
Anchor carpeting to floor.	Is a permanent solution. Is inexpensive. Eliminates staff assistance.	Will leave holes in historic flooring. Is not a reversible solution. May change historic appearance.
Remove carpeting.	Is a permanent solution. Requires only labor cost. Eliminates need for staff assistance. Is a reversible solution.	
Use corner non-slip pads.	Is inexpensive. Eliminates staff assistance.	May not be a permanent solution.

E. Changes in Level: ***See Steps, item 1A.***

F. Illumination. **PROBLEM:** ***Low lighting*** **(any part of the floor that has low illumination) may be a hazard to those with visual impairments.**

Typical Solutions	Advantages	Disadvantages
Increase present light levels.	Allows independent access. Is a reversible solution.	May change historic atmosphere. Increases use of energy.

3. ACCESS TO TOILET FACILITIES

It is rare that historic buildings allow public use of historic toilets. More likely, a historic site provides toilet facilities and other conveniences in a nearby visitor center or in a less historic building. In this case, the toilet rooms should be remodeled to comply with current standards of accessibility. If public toilet rooms are located in historic buildings, they are usually inaccessible to those in wheelchairs. Inaccessibility to those in wheelchairs may be due to any combination of the following problems. An architect should evaluate each toilet room to determine the extent to which these typical problems apply.

A. Vestibule or Privacy Area at Entrance. **PROBLEM:** ***Small vestibule or privacy area at the entrance*** **may not allow those in wheelchairs to maneuver and pass through to the main room.**

Typical Solutions	Advantages	Disadvantages
Remove inner privacy door or shorten privacy panel.	Allows independent access. Is relatively inexpensive. May be reversible.	Could change appearance of historic toilet. Might affect privacy.

B. Main Toilet Room. **PROBLEM:** ***Restrictive clear space*** **within the room may not allow wheelchairs to maneuver.**

Typical Solutions	Advantages	Disadvantages
Enlarge *toilet room* into adjacent area.	Allows independent access.	May involve destruction of historic fabric in toilet room and/or adjacent areas. May not be structurally possible. Is expensive.

PROBLEM: *Narrow stall door* may not permit a wheelchair to enter. **C. Toilet Stall.**

Typical Solutions	Advantages	Disadvantages
Remove *stall door* and *front panels* adjacent to door, and install wider door or curtain.	Allows independent access to stall.	Is only as effective as width of stall structure.

PROBLEM: *Small toilet stall* (one that is too narrow to permit lateral transfer from wheelchair to toilet seat or too small to allow wheelchair to maneuver) may be a barrier.

Typical Solutions	Advantages	Disadvantages
Make two adjacent stalls into a *large stall* by removing one water closet, and installing new partitions with a wide door.	Allows independent access. Provides space for attendant care if needed.	Reduces plumbing fixture count (may violate code requirements). Changes appearance of toilet room. May affect historic features. May be expensive if remaining water closet must be moved.
Remove partition between two *toilet stalls* and install privacy curtain (temporary solution).	Allows use of two toilets. Is reversible. Allows independent access. Is a permanent solution.	Provides less privacy. Curtain may be soiled, ripped, etc. May be considered unacceptable.

PROBLEM: *Absence of grab bars* makes it very difficult for those in wheelchairs to transfer to the toilet. **D. Grab Bars.**

Typical Solutions	Advantages	Disadvantages
Install *grab bars* on rear wall and nearest side wall.	Provides support within reach from toilet seat. Allows for independent movement. Is permanent solution. May be reversible.	Anchor holes for grab bars may affect historic fabric.

E. Lavatory. **PROBLEM:** ***Insufficient clear opening underneath*** **(lavatories that have less than 29-inch clear opening under front) will not permit an individual in a wheelchair direct access to fixtures.**

Typical Solutions	Advantages	Disadvantages
Remove *lavatory* with legs or deep apron and install proper wall hung lavatory.	Allows independent access.	May change historic appearance.
Exposed hot water pipes must be insulated.	Increases space for wheelchairs to maneuver.	May damage historic fabric.
		May be difficult to patch floor and wall so as to match existing materials.

F. Urinals. **PROBLEM:** ***High urinals*** **are difficult or impossible to use for men in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Remove existing *urinal* and replace with lower wall-mounted urinal (15-17 in. high at rim of urinal).	Allows independent access.	May affect historic fabric.

G. Mirrors and Dispensers. **PROBLEM:** ***High mirrors and dispensers*** **are difficult or unusable by those in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Lower existing *mirrors* and *dispensers.*	Is permanent solution.	May expose bolt holes and require patching.
		May damage historic fabric.
Install *tilt mirror* or additional mirror and dispensers adjacent to existing ones.	Does not affect original mirror and dispenser.	Requires space for additional mirror and dispensers.
	Is a permanent solution.	Introduces modern features.

GENERAL PROBLEM: ***Inaccessible public toilet rooms for men and women*** **are not usable by visitors in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Modify one *toilet room,* install thumb-turn lock.	Minimizes intrusion and damage to historic fabric.	Restricts use by public.
		May violate local codes.
Modify one *staff toilet,* install thumb-turn lock and mark it for private use by either sex.	Further minimizes intrusion and damage to historic fabric.	Segregates disabled visitors.

4. ACCESS TO THE SITE

All paths of travel at a historic site, especially those that lead to historic structures, ought to be accessible to disabled visitors. Priority should be given to the path most used by visitors.

A. Paths. **PROBLEM:** ***Narrow path*** **(less than 32 inches wide) may be a barrier to visitors in wheelchairs and visitors using crutches.**

Typical Solutions	Advantages	Disadvantages
Widen *path of travel.*	Is a permanent solution. Eliminates need for staff assistance.	May affect historic appearance of site. May be expensive. May not be a reversible solution.

PROBLEM: *Improperly Paved Path* (not paved with smooth, non-slip material) may be a barrier or a hazard to visitors in wheelchairs, and visitors with mobility and visual impairments.

Typical Solutions	Advantages	Disadvantages
Pave *path* with a smooth non-slip surface.	Is a permanent solution. Eliminates need for staff assistance.	May affect historic appearance. May be expensive. Is not a reversible solution.

PROBLEM: *Steep paths* are a barrier to visitors in wheelchairs and a hazard to those with mobility and visual impairments.

Typical Solutions	Advantages	Disadvantages
Regrade *path* to slope 1 in 20.	Is a permanent solution Eliminates need for staff assistance.	May affect historic appearance of site. Requires a considerable lengthening of a path. To overcome a rise of 12 inches, a 20-foot path is necessary. Is not a reversible solution. Is an expensive solution.
Regrade *path* to slope 1 in 12 with handrails and level areas every 30 feet.	Is a permanent solution. Eliminates need for staff assistance.	May affect historic appearance of site. Path becomes a ramp and must be properly railed. May be impossible to ramp a very steep path. Is an expensive solution. Requires a considerable lengthening of a path. To overcome a rise of 12 inches, a 12-foot path is necessary. Is not a reversible solution.

PROBLEM: *Long paths* may tire visitors in wheelchairs and others with mobility impairments.

Typical Solutions	Advantages	Disadvantages
Install *benches* (with arms and backs) every 250 feet.	Eliminates the need for staff assistance. Is relatively inexpensive.	May be a visual intrusion.

B. Steps. *See Steps, item 1A.*

GENERAL PROBLEM: ***Inaccessible walks*** **are a barrier for visitors in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Provide a golf cart with lift to transport a visitor in wheelchair.	Minimizes intrusion and damage to historic fabric. May be used to provide access to and from parking.	Requires staff assistance.

SECONDARY AREAS

5. ACCESS TO OTHER FLOORS

Most historic structures have other floors that are open to the public. After making a first floor accessible, the next priority is to make the second floor (or other floors) accessible.

In most cases, a stairway is the only means of going from floor to floor. Unless there is an elevator or there is room to build an elevator, there are seldom real options for getting a visitor in a wheelchair from one floor to another.

Historic stairways also pose problems for visitors with mobility and visual impairments. In many cases, there are solutions to some problems that will give access to many, if not all, visitors with mobility and visual impairments.

A. Railings.

PROBLEM: ***One railing*** **(a stairway with a railing on one side) is a barrier to visitors with weakness or paralysis on one side of their bodies.**

Typical Solutions	Advantages	Disadvantages
Install another *railing.*	Is a permanent solution for many visitors. Is relatively inexpensive. May eliminate need for staff assistance. Is a reversible solution.	May cause visual intrusion. May damage historic fabric. May make a narrow stairway too narrow.

PROBLEM: ***Low railing*** **(a stairway with a low railing) is a barrier or a hazard to visitors with upper extremity and mobility impairments.**

Typical Solutions	Advantages	Disadvantages
Install a new upper *railing.*	Is a permanent solution. Eliminates need for staff assistance.	Is a visual intrusion. May involve damage to historic fabric. Is expensive. May not be a reversible solution.

PROBLEM: ***Wide railing*** **may be a barrier to persons with manual impairments.**

Typical Solutions	Advantages	Disadvantages
Install a new *railing.*	See 1B	
Install a narrow *railing* piece over existing railing.	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive.	Is a visual intrusion. May involve damage to historic fabric. May not be a reversible solution.

PROBLEM: ***Projecting Nosings*** **(steps where the tread extends beyond the riser) are a barrier or a hazard to visitors with mobility and visual impairments.**

Typical Solutions	Advantages	Disadvantages
Install wood boards over *riser*. Fill in with wood below nosing, tapered to thickness where it meets tread below.	Is a permanent solution. Eliminates need for staff assistance. Is a reversible solution.	May be a visual intrusion. Is relatively expensive.
Cover steps with plain patterned carpet.	Is a permanent solution. Eliminates need for staff assistance. Is inexpensive. Is a reversible solution.	May be a visual intrusion.

PROBLEM: ***Open risers*** **are a hazard to visitors with mobility and visual impairments.**

Typical Solutions	Advantages	Disadvantages
Install solid *risers*.	Is a permanent solution. Eliminates need for staff assistance.	May cause damage to historic fabric. May be a visual intrusion. Is expensive. Is not a reversible solution.

PROBLEM: ***Uneven treads*** **are a hazard to visitors with mobility and visual impairments.**

Typical Solutions	Advantages	Disadvantages
Cover steps with plain patterned carpet.	Is a permanent solution. Eliminates need for staff assistance. Is relatively inexpensive.	May be a visual intrusion.

GENERAL PROBLEM: Stairways are *inaccessible* to visitors in wheelchairs.

Typical Solutions	Advantages	Disadvantages
Install a *chair lift*.	Provides access for those who can sit on lift. Is a reversible solution.	May affect flow of visitor traffic up and down stairs. May damage historic fabric. Is a visual intrusion.
Install a *residential elevator*.	Provides independent access for those in wheelchairs. Is permanent.	May not be structurally possible. Requires alteration of building which may affect historic fabric. Is not reversible. Requires maintenance.

Typical Solutions	Advantages	Disadvantages
Install a *commercial elevator.*	Provides access for many visitors. Conforms with standards.	May be structurally impossible. Requires alteration of building which may affect historic fabric. Requires sufficient space to install shaft 10 ft. by 10 ft. Is expensive.

6. ACCESS TO PARKING

Most visitors come to a historic site by car. Therefore, it is important for visitors, especially certain disabled visitors, to park in a nearby, accessible parking area. It is unlikely that a parking area has any historical significance, therefore, it should be made to comply with present standards.

Parking areas should have wide spaces reserved for disabled visitors. These spaces should be closest to the parking area exit, should be identified with the International Symbol of Accessibility, and should have directions leading to them. In addition, the parking area should be paved with smooth, non-slip material, and be free of curbs or steps in the path of travel.

PROBLEM: *Narrow spaces* do not permit individuals in wheelchairs or with braces to get in and out of vehicles.

Typical Solutions	Advantages	Disadvantages
Convert four 9-foot *spaces* into three 12-foot wide spaces.	Does not affect other parking spaces. No need to repaint all lines.	Reduces number of spaces in lot by one.
Locate special parking spaces adjacent to walk or other smooth, stabilized, level area and use this area for disembarking and entry.	Does not affect number and size of existing parking spaces.	May require a curb ramp if walk has curb.

PROBLEM: *Steps* or *Curbs*: see *Steps,* item 1A.

PROBLEM: *Loose, rough, and uneven areas:* See *Improperly Paved Path,* item 4A.

Typical Solutions	Advantages	Disadvantages
Reserve a proper *parking space* at or near the site for use by disabled visitors, i.e., next to building or in street.	Reduces travel distance from parking area to building.	May be a visual intrusion. May require approval by city or town. May not be sufficient if visitation is high.

7. ACCESS TO DRINKING FOUNTAINS

Most drinking fountains are modern conveniences. Their location in a historic part of the site, however, may cause some problems if they are moved.

PROBLEM: ***High drinking fountains*** **do not permit use by visitors in wheelchairs.**

Typical Solutions	Advantages	Disadvantages
Remove and replace with *drinking fountain* designed for use by wheelchair.	Everyone can use wheelchair drinking fountain. Blind people will benefit from recessed fountain.	Expense of removing serviceable drinking fountain to purchase new, more costly one.
Install *fountain* at lavatory in accessible toilet room.	Does not affect existing fountain or surrounding area. Is less expensive than installing another water fountain.	May segregate disabled individuals. Is less pleasurable in toilet room. Is less likely to be used if not located near regular fountain.
Install cup dispenser beside inaccessible *fountain.*	Immediate solution.	People often carry and spill water, drop cups on floor; dispenser is often empty.
Add proper wheelchair *drinking fountain* adjacent to and plumbed into existing fountain.	Does not disturb original fountain or uncover holes to be patched. May be less expensive than lowering existing fountain.	Takes up more space. Is another modern feature.

PROBLEM: ***Improper drinking fountain controls*** **are difficult or impossible to operate by those with manual impairments.**

Typical Solutions	Advantages	Disadvantages
Change Button *Control to* lever handles on both sides.	Easier for everyone to use.	None.

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8. ACCESS TO PUBLIC TELEPHONES

PROBLEM: ***High telephones*** **(typical height) are unusable by visitors in wheelchairs.**

PROBLEM: ***No amplifying device*** **(a telephone without an amplifying device) may be unusable by visitors with hearing impairments.**

Typical Solutions	Advantages	Disadvantages
Public telephones are owned and operated by the Telephone Company and can only be modified by them. Upon request, and for a service charge, they will lower a phone on private property and will install an induction coil to augment hearing aids.	Low cost.	None.

CHAPTER 6 Case studies

INTRODUCTION

This chapter contains four case studies which illustrate how the information contained in the other chapters of this Part can be applied to actual situations. The historic structures chosen for the case studies exemplify some of the priority problem areas discussed in Chapter 5. The case studies are as follows:

Case Study No. 1: Custom House addresses the problem of access to the building. The entire structure is discussed, but the main focus is on the inaccessibility of the structure to people in wheelchairs.

Case Study No. 2: Derby House shows how administrative accommodation can be used creatively to overcome a problem of access to the main floor.

Case Study No. 3: Arlington House discusses the use of devices to assist disabled visitors in gaining access to and around the site.

Case Study No. 4: Vanderbilt Mansion discusses how major modification of an elevator might be undertaken to allow visitors in wheelchairs access to other floors.

These cases are examples; the recommended solutions of the author do not necessarily imply approval by the National Park Service.

CASE STUDY NO. 1: Custom House, Salem Maritime National Historic Site, Massachusetts.

ACCESS TO THE ENTRANCE

I. INTRODUCTION

This building was chosen to represent an early type of federal building with the typical architectural barriers of that day: an impressive building on a pedestal of twelve granite steps, serving as the headquarters and visitors center for five buildings and two wharves on a total of nine acres. It is the only national historic site which represents the history of 18th- and early 19th-century American shipping.

Located on Salem's Waterfront, this site includes examples of early American port and wharf facilities. Fifty thousand visitors visit the Custom House each year; and five times that number visit other parts of the site—the Bonded Warehouse, Central Wharf, Derby Wharf, Derby House, and the West India Goods Store.

Every year, hundreds of major shipping vessels sailed into Salem Harbor. These ships' cargoes were taxed or held in storage until taxes could be paid or goods sold, exported, or auctioned.

The Custom House presents a particular accommodation challenge because of its inaccessibility to those in wheelchairs and difficult access for those with mobility limitations. The twelve granite steps at the only visitor entrance make ramps unfeasible, and alternate side entrances have narrow, steep stairways. Because the Bonded Warehouse building is adjacent to the rear of the Custom House, no access to the Custom House is provided at the rear.

II. CLASSIFICATION OF THE SITE

The Custom House is classified as follows.

Significance:	National, the only one of its kind representing American ships.
Reason for Significance:	The Custom House is one historic structure within the Salem Maritime National Historic Site. Salem conveys the story of early New England shipping, an industry which played an important role in the economic development of the United States.
Treatment:	Preservation.
Use or Function:	Restored historic structure, visitor center, and offices.
Sector:	Public.
Yearly Visitation:	55,000.
Location:	Urban.
Staffing:	At least one full-time staff member.

III. ACCOMMODATION PROBLEM IDENTIFIED

A survey of the building and its immediate site, using the checklist, revealed the following accommodation problems.

Parking Lot:

There is a new parking lot with approximately 40 spaces. It is located about 300 feet from the Custom House. The parking lot:

—has no reserved spaces for disabled visitors;
—is not paved;
—has no directional signs to the Custom House;
—has no way to request assistance from Custom House staff.

Curb Ramps:

The sidewalk leading to the Custom House from the parking lot is brick. There are no curb ramps. All parking (parking lot and street parking) is across the street from the Custom House. (The sidewalk and street are not Federal property.)

Ramps:

None.

Entrance/Exits:

The Custom House is set back from the street. There is a brick apron with one step surrounding the structure.

The main public entrance has twelve granite steps leading to the front door. There is no way to overcome these steps for a person in a wheelchair.

The main entrance steps are railed on both sides. The railing is elaborately designed cast iron. The railing is lower than present standards allow.

There is an additional step at entrance door. There is no way to request assistance from a staff person if a visitor cannot get up the stairs.

There is a side entrance with twelve granite steps. There is a basement entrance with no way to get from the basement to the first floor.

Doors and Doorways: There are two leaf doors at the entrance. Each door is narrower than the standard wheelchair. The doors have thumb-latch hardware. The door requires more than 15 pounds of effort to open. All doorways have high thresholds.

Stairs and Steps: The stairway has one (discontinuous) railing that is too low and too wide for many mobility-impaired visitors.

Floors: Wooden floors are slippery when polished.

Public Toilet Rooms: Public toilets are in a separate wooden structure in the yard behind the Custom House. The toilets are not accessible to persons in wheelchairs. There are no directional signs to these toilets.

Drinking Fountains: There is no drinking fountain.

Public Telephones: There is no public telephone.

Elevators: There is no elevator.

Controls: Visitors do not use controls.

Fire Alarm Signals: There are no warning signals.

Hazards: There are no hazards.

IV. MAJOR PROBLEM IDENTIFIED All three entrances (front, and two sides) are inaccessible to visitors in wheelchairs because each entrance has twelve steps leading to the first floor.

V. PROPOSED SOLUTIONS After careful evaluation of the problem of entrance to the building, the following alternate solutions were analyzed.

A Vertical Wheelchair Lift at the Left Side Entrance:
A lift could be placed at the left side entrance. However, installing a lift would require the removal of a portion of the cast-iron railing that surrounds the top of the steps.

An Inclined Wheelchair Lift at the Left Side Entrance:
An inclined lift could be installed over the left side steps. However, this would require removing a section of the brick apron and installing a metal plate. Holes would have to be drilled into the granite steps in order to stabilize the cograil. In addition, the step at the door would have to be ramped.

Cut Through the Brick Common Wall Between the Custom House and the Bonded Warehouse:
This option would require that a ramp be installed to overcome the three steps leading into the Bonded Warehouse.

Alternate Accommodation:
There are a number of options within this option.

Option A—Exhibit.
Create an exhibit in a street level window or at a separate location.

Option B—Audio presentation.
Create an audio presentation and locate it on the side of the Custom House. The audio presentation and/or the exhibit would inform visitors about the Custom House even when it was not open.

Option C—Show a film (slide show, videotape) in the nearby Derby House.
The Derby House has a rear entrance that is accessible to all visitors. There is a large room just inside the entrance that would be suitable for presenting a film (etc.) about the Custom House.

Option D—Staff Briefing
If there were a buzzer outside the Custom House, a person in a wheelchair could call for a staff person to come and interpret the structure. A picture album could be created that would show the interior of the Custom House.

VI. OTHER PROBLEMS DISCUSSED

These problems are listed in the order in which they appeared on the checklist used to assess the Custom House.

1. **The parking area has no reserved spaces for disabled visitors:**

Spaces should be reserved in the parking area, or the Town of Salem should be asked to reserve spaces across the street from the Custom House.

2. **The parking area has a pebblestone surface which is uneven and causes problems for mobility-impaired persons:**

The parking area or a path should be paved to benefit those visitors who walk with difficulty.

3. **There are sidewalks with no curb cuts for persons in wheelchairs:**

The Town of Salem should be asked to make curb cuts for wheelchairs. Curb cuts should be provided on both sides of the street in front of the Custom House.

4. **The stone apron in front of the Custom House contains a step that causes difficulty for mobility-impaired individuals:**

The stone slabs that form the apron can be tilted to create a natural ramp which will allow persons in wheelchairs and those who walk with difficulty to move about the area in front of the building.

5. **The entrance has twelve steps leading to the front door:**

See IV: Major Problem Identified.

6. **An additional step at the front door presents problems for those with mobility impairments:**

If access is provided up the front steps for those in wheelchairs, then a ramp should be provided at this front door step. The ramp could be temporary. If access is not provided for those in wheelchairs, then staff can assist those who walk with insecurity up this step.

7. **The doors are a pair, each one narrower than current standards permit for a person with crutches:**

When both doors are opened, there is enough room for a person using crutches to get through. Staff should assist by opening the two doors.

8. **The door has a closer that requires more than 15 pounds of effort to open and makes the door close too quickly for mobility-impaired visitors:**

The door may open with less pressure and close less quickly if the closer were oiled and adjusted.

9. **The door has a thumb-latch handle which is difficult to open for many mobility-impaired visitors:**

While the hardware is not the original hardware, its removal is not consistent with Park Service preservation policy. Staff members stationed near the door can assist in opening the door.

10. **Interior doorway thresholds are too high for many mobility- and visually impaired visitors:**

The thresholds could be beveled or a staff member could assist a mobility- or visually impaired visitor over the threshold.

11. The stairway to the second floor is steep, and has one low, discontinuous railing which is a hazard for many mobility—and visually impaired visitors:

The second floor of the Custom House has limited visitor exhibits. Modification of the stairway is not necessary. Staff members could help a mobility- or visually impaired person up the stairs, or photographs of the upstairs rooms could be shown on the first floor.

12. The wood floors are slippery when freshly polished:

The floors could be polished in a flat or non-slip finish.

13. The public toilets are not accessible to visitors in wheelchairs:

The public toilets should be remodeled to accommodate visitors in wheelchairs. A sign should be posted and park pamphlets should identify and locate such accessible facilities.

14. There is no drinking fountain:

An accessible drinking fountain should be installed near the public toilet.

15. The Custom House is not clearly marked:

The original lettering, "CUSTOM HOUSE," is located high on the facade of the building. The location of the Custom House and its use as a visitor center should be identified by a sign at the parking area. An additional sign in the front of the Custom House at street level may be necessary.

VII. ANALYSIS OF PROBLEMS

To illustrate the process of decision making as discussed in Part 2, Chapter 4, a sample accommodation worksheet is included next. The worksheet has been filled in to evaluate the major problem at this structure—all entrances (front, and two sides) are inaccessible to visitors in wheelchairs because each entrance has twelve steps leading to the first floor. The historical architect should use this format for evaluating other priority problems which involve the comparison of several alternative solutions.

VIII DISCUSSION AND CONCLUSIONS

The Custom House exemplifies a historic building which presents serious difficulties in accommodating visitors in wheelchairs. The many granite steps at the main entrance limit the options for accessibility considerably. While a mechanical device was considered to take visitors up these steps, the creation of a new back entrance was discussed, and the installation of an elevator was considered. It seemed that a combination of alternate accommodations provided the most feasible solution. By upgrading visitor interpretation efforts to include pictures or models of the interior of the Custom House, and by modifying an existing audio-visual program to portray the site, it was felt those with total mobility impairments could reasonably experience the historic structure.

A ground level exhibit depicting the inside of the building was proposed which would provide enjoyment for all those who passed by, even when the building was closed. The exhibit could be placed in a ground level window, on an existing sign board, or at a separate location. Care should be taken so that the exhibit does not intrude on the historic scene. Alternatively, an audio presentation could be located at ground level.

Alternate accommodation was tentatively recommended with the knowledge that two wharfs and another building on the site offered considerably better accessibility for those in wheelchairs, and that the building is one part of a nine-acre site.

As for visitors with other disabilities, this case study demonstrates how some changes in the interpretation program, minor physical modifications, plus staff assistance can significantly upgrade accommodation. Many such changes could be made at modest cost and in a reasonable time frame.

Implementation of certain changes will require careful study by site staff, the Regional Historical Architect, Regional Chief of Interpretation and possibly staff from the Denver Service Center and Harpers Ferry Center. In many cases, certain accommodations can be made immediately by staff maintenance personnel. In other cases, such as the alteration of

the public toilet facilities located behind the building, there will be lengthy and costly projects. Once again, it is important to underscore the need for interim accommodation while certain difficult changes are being made. Accessible toilet facilities should thus be found nearby, and visitors in wheelchairs directed to them.

ACCOMMODATION WORKSHEET
(Case Study No. 1)

HISTORIC SITE: CUSTOM HOUSE, SALEM MARITIME N.H.S.

ACCOMMODATION PROBLEM: All entrances are inaccessible to visitors in wheelchairs.

EVALUATOR _____ **Date** _____

	1	2	3	4
PROPOSED SOLUTIONS	Vertical wheelchair lift at left side entrance.	Inclined wheelchair lift at left side entrance.	Entrance to Custom House through contiguous Bonded Warehouse.	Alternate accommodation.
ACCOMMODATION BENEFIT	Access to first floor. Can benefit other mobility impaired. Side entrance involves some segregation. +	Same as No. 1 +	Access to first floor. Entrance for disabled would be segregated +	Does not provide physical access. May segregate unless used for all. +
EFFECT ON HISTORIC FEATURES	Requires removal of part of railing. Some visual intrusion. Permanent. −	Involves drilling holes in steps. Permanent change to steps. −	Permanent change that destroys historic fabric. Irreversible. Less conspicuous. −	None +
COST	4,000-5,000 −	5,000-9,000 −	8,000 −	Varies
TIME	1 week +	1 week +	1 month −	1 month −
IMPACT ON NPS STAFF	Staff must operate lift and bring out portable ramp. −	Same as No. 1 −	Staff must open door and bring out portable ramp. −	Staff need to be present.
SAFETY	Reasonably safe +	Same as No. 1 +	Fire exit problem is possible. −	N/A
OTHER	Periodic maintenance. Vandalism possible. −	Same as No. 1 −	Slight −	N/A
SUMMARY	Provides physical access with some intrusion.	Provides physical access with some intrusion and damage to steps.	Alteration involves damage to historic fabric. Segregate disabled somewhat.	Interpretive alternative to physical access. May segregate unless given to all visitors.
RECOMMENDATION	Preferred physical access solution.	May be less desirable than vertical lift.	Least desirable physical solution.	Interpretive alternative to physical access. (Interim solution.)

CASE STUDY NO. 2: Derby House, Salem Maritime National Historic Site, Massachusetts.

ACCESS TO THE ENTRANCE

I. INTRODUCTION

The Derby House, now the oldest brick dwelling in Salem, Massachusetts, was erected in 1761-62 by Captain Richard Derby. His son Elias Hasket Derby lived in this house until after the American Revolution.

The house is a fine example of an 18th-century colonial home, complete with narrow center hallway. It is this hallway with its even more narrow doorway that is both a historic feature and a barrier for visitors in wheelchairs.

II. CLASSIFICATION OF THE SITE

This Derby House is classified as follows.

Significance:	National.
Reason for Significance:	The Derby House is one historic structure within the Salem Maritime National Historic Site. Salem conveys the story of early New England shipping, an industry which played an important role in the economic development of the new United States.
Treatment:	Preservation.
Use or Function:	Restored historic structure, guided tours only.
Yearly Visitation:	3,000 or less.
Location:	Urban.
Staffing:	One interpreter (part-time) at any one time.

III. ACCOMMODATION PROBLEM IDENTIFIED

A survey of the site using the Survey Checklist revealed the following problem related to access to the main floor:

—the narrow (23½ inches) doorway in the center hallway is a barrier to passage by visitors in wheelchairs.

A usual tour of the site starts at the front door and makes use of the center hallway to move from the front of the building to the back. (See plan of first floor below with usual tour route.) Visitors are not normally permitted to walk about in the rooms with the exception of the kitchen where movement is along a carpet. They are allowed to enter the room and stand in a roped-off area just inside the door.

Although the front entrance of the Derby House has four stone steps and is thus inaccessible to those in wheelchairs, the back kitchen entrance is at ground level and offers reasonable access. Once inside the kitchen, however, a visitor in a wheelchair is limited in enjoyment of the site unless some alteration of the center hallway or modification of the tour route is made.

IV. PROPOSED SOLUTIONS

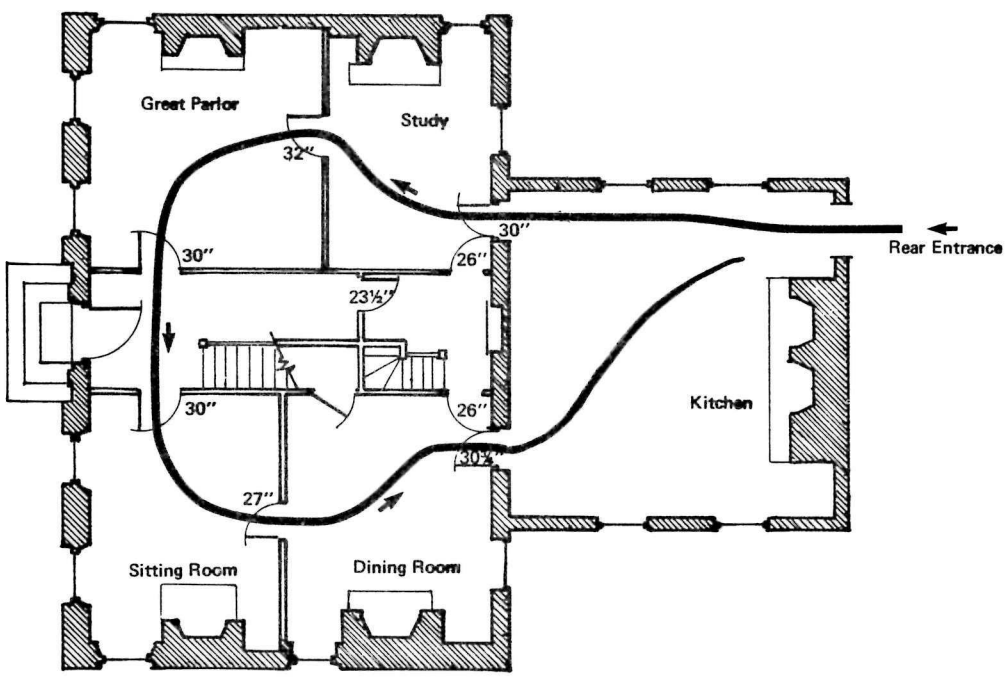
After careful evaluation of the problem of the narrow hall doorway, the following alternate solutions were proposed:

-widen the doorway at the center hall by removing the door and molding strips at the frame;

—reroute the visitor tour for individuals in wheelchairs so as to use wide doorways.

As mentioned before, the present clear opening of the center doorway is 23½ inches. If the door were removed, the clear opening would be increased to 24½ inches. The doorway has molding strips on top of the frame. If these molding strips were removed, the opening would be 26½ inches. Such an opening would permit access for those in narrow wheelchairs (23-23½ in.) and difficult or impossible access for those with average wheelchairs. Visitors with wheelchairs as wide as 29 inches would be unable to use this doorway. Further alteration of the frame, such as removal and installation of a wider frame, would result in irreversible damage to the historic fabric and is not considered to be a serious alternative.

As noted below in the sketch of the first floor, the second solution calls for the tour to go from the kitchen through a 30-inch doorway (normally kept closed) to the study. Visitors in wheelchairs would then be permitted to travel the length of the study, pass through a 32-inch doorway and enter the great parlor. Thirty-inch doorways at the hallway would allow wheelchairs to pass through into the sitting room. From there, a 27-inch doorway might prove inaccessible to some individuals in wide wheelchairs. Those in standard wheelchairs would have to be pushed through the opening, so as not to hurt their knuckles while propelling themselves through the narrow opening. Travel through the dining room and back to the kitchen would complete the tour. Those visitors who found the 27-inch doorway to be a barrier would have to retrace their route in order to return to the kitchen.



Sketch of first floor Derby House showing alternate visitor flow.

When presented with the above two solutions to the narrow center doorway problem, the second option is clearly superior. It achieves access by changing the tour route and has negligible effect on the historic fabric when individuals in wheelchairs, and possibly accompanying visitors, travel over the well-worn floor boards. The second option would necessitate changing the tour and accompanying interpretation but it is felt that if all visitors in the group were given this modified tour, no segregation or separate treatment of a disabled person would result. Since the tour is always guided, staff assistance to push wheelchairs is available.

This case illustrates how administrative accommodation in the form of a modified tour pattern and possible staff assistance can achieve at least a BELOW STANDARD level of physical access. When compared to the damaging effects of alterations, this creative solution seems to provide reasonable access while respecting the historic value of the center hallway.

V. DISCUSSION AND CONCLUSION

CASE STUDY NO. 3: Arlington House, The Robert E. Lee Memorial, Virginia

ACCESS TO THE SITE

I. INTRODUCTION

This antebellum home of the Custis and Lee families, located in the midst of the Arlington National Cemetery, is discussed here in relation to access to the site. Normally, visitors are not allowed to drive to the house in their own vehicles. Instead, they must transfer to private tour buses in the entrance parking lot. These tour buses are not accessible to visitors in wheelchairs.

There are no parking spaces at the site itself. However, visitors could disembark at a circular drive in the back of the house. A parking lot near the old cemetery administration building has a walkway to the Arlington House that is steep and approximately 1/8 mile long. Walking or wheeling at the site is difficult. The paths are not stabilized. They are covered with the same type of loose one-half-inch round stones that were used 200 years ago. Stone paths extend around the house. Visitors are allowed to walk on paths near the house, but are not allowed to roam freely over the grounds.

II. CLASSIFICATION OF THE SITE

The Arlington House is classified as follows.

Significance:	National.
Reason for Significance:	Home of famous person.
Treatment:	Restoration.
Use or Function:	House museum.
Yearly Visitation:	500,000.
Location:	Urban.
Staffing:	3 full-time, 2 part-time, plus 3 to 4 additional in summer.

III. ACCOMMODATION PROBLEM IDENTIFIED

A survey of the site using the Detailed Survey Checklist revealed the following two problems related to parking lots and walks:

—tour buses which transport visitors from the parking lot to the site are not accessible to individuals in wheelchairs;

—paths at the site are covered with stones which is a barrier for those in wheelchairs and a problem for those who walk with instability.

It is important to understand that wheelchair travel over small stones is very difficult. The wheels sink into the stones, making it difficult for persons in wheelchairs to propel themselves. It is likewise difficult and tiring for somebody else to push an individual in a wheelchair.

Those who use crutches or canes also have a difficult time with stones. Tips of crutches sink into the ground and may slip as the user walks. If deep, the stones may also make it difficult for visitors using crutches to swing their feet as they walk.

IV. PROPOSED SOLUTIONS

A careful analysis of the problems described above resulted in the following alternate solutions:

Problem No. 1 Access to the site:

—install a hydraulic wheelchair lift in a tour bus;

—allow visitors in wheelchairs to drive or be driven to the house in an automobile and park in the driveway at the rear of the house;

—allow visitors in wheelchairs to drive or be driven to the house and disembark; provide staff to park the visitor's car or van at the cemetery parking lot;

—provide an additional vehicle that would transport an individual in a wheelchair to and from the site; provide staff to drive the vehicle if necessary;

—pave walks or stabilize them by other means;

—place wooden or metal walkways over stone paths;

—provide staff assistance to push individuals in wheelchairs around the site as needed;

—provide a vehicle to transport individuals in their wheelchairs around the site; provide staff to assist visitors and drive the vehicle if necessary.

The proposed solutions to each problem were then evaluated using the Accommodation Worksheet.

Problem No. 2 Access around the site:

V. DISCUSSION AND CONCLUSION

Analysis of the alternate solutions to problem No. 1, access to the site, indicates that there are three favorable options:

—install a hydraulic wheelchair lift in a tour bus;

—allow visitors in wheelchairs to drive to the site and disembark;

—provide staff to park the visitor's car or van;

—provide an additional vehicle that would transport an individual in a wheelchair to and from the site.

The choice among these options may depend on the availability of staff, the time needed for implementation of the solution, and available funds. A tour bus equipped with a wheelchair lift allows visitors in wheelchairs to use the same facilities as other visitors in accordance with Park Service Management Policies (1978, III-7). Retrofitting of a bus may, however, be a lengthy process. In the meantime, one of the other two options may have to be implemented.

The problem of access around the site has only one feasible solution, i.e., provide a vehicle to transport individuals in their wheelchairs around the site and provide staff to drive the vehicle if necessary.

Other options considered are ineffective and/or would result in serious visual intrusion.

Individuals should be transported in their own wheelchairs as opposed to being transferred to a seat in a vehicle since such a transfer is difficult or impossible for many visitors in wheelchairs. Those people with paralysis of arms and hands may need to remain in their own wheelchair. Likewise, other individuals may have support systems attached to the wheelchair which cannot be detached or are difficult to remove. For a solution to be effective for *all* visitors in wheelchairs, as well as others who walk with instability, the vehicle should have a wheelchair lift and space to load a wheelchair.

At present, there is no known vehicle that would serve this purpose. Any van would likely be large and limit the view of a passenger. A one passenger vehicle such as the one described in Appendix I, "Selected Devices to Assist Disabled Individuals at Historic Sites," will carry an individual in a wheelchair, but the visitor must be able to control the vehicle alone. What is needed is a vehicle driven by a staff member with space for one person to sit and another person to be loaded while in a wheelchair. Further study is required to locate such a vehicle, if already in existence, or to determine the feasibility of modifying a vehicle, or of building one.

When the two problems are considered together, only the vehicle described above is capable of traveling over roads and stone paths.

If this option were seriously explored, or if some combination of accessible bus and other vehicle were decided upon, it is still necessary to devise an interim solution. In this case, alternate accommodation (administrative) which involves staff assistance may be needed. This might take the form of allowing individuals to disembark at the rear of the house, parking their cars or vans, and assisting them over paths.

In all, the grounds of the Arlington House are a significant element of the historical scene. Any modification of the grounds (also historic) would be a major visual intrusion. The historical architect is thus challenged to preserve this site for all to enjoy, and at the same time, devise a plan which overcomes barriers to disabled individuals.

ACCOMMODATION WORKSHEET
(Case Study No. 3)

HISTORIC SITE: ARLINGTON HOUSE, THE ROBERT E. LEE MEMORIAL

ACCOMMODATION PROBLEM: Tour buses which transport visitors from the parking lot to the site are not accessible to individuals in wheelchairs.

EVALUATOR _____ **Date** _____

	1	2	3	4
PROPOSED SOLUTIONS	Install a hydraulic wheelchair lift in a tour bus.	Allow visitors in wheelchairs to drive to house and park in driveway.	Allow visitors in wheelchairs to drive to house. Provide staff to park vehicle.	Provide additional vehicle that would transport visitor in wheelchair.
ACCOMMODATION BENEFIT	Independent access in integrated manner. +	Convenient for disabled visitor. +	Convenient for disabled visitor. +	Provides access to grounds and site. Tends to segregate. +
EFFECT ON HISTORIC FEATURES	None. +	Visitor vehicles are significant intrusion. −	None. +	Slight visual intrusion of modern vehicle on grounds. +
COST	Over $14,000 each. −	None +	None +	? −
TIME	Several months −	Slight +	Slight +	? −
IMPACT ON NPS STAFF	Some assistance may be needed with lift. +	Slight +	Requires staff to park vehicles and return at the end of the visit. −	May require staff to operate.
SAFETY	Good +	None +	Safety of driving other person's specially equipped car. −	Good +
OTHER	Some maintenance required. +	Instrusion on other visitors. −	Slight +	Maintenance −
SUMMARY	Change is to modern vehicle. Allows integrated access.	Creates visual instrusion.	Requires considerable staff assistance.	Versatile solution. Access to site *and* grounds. May require extra staff.
RECOMMENDATION	Preferred solution.	Intrusion is too great.	Consider as interim solution.	Explore to see if vehicle exists and feasibility.

ACCOMMODATION WORKSHEET
(Case Study No. 3)

HISTORIC SITE: ARLINGTON HOUSE, THE ROBERT E. LEE MEMORIAL

ACCOMMODATION PROBLEM: Paths at the site are covered with stones which is a barrier for those in wheelchairs & a problem for those who walk with instability

EVALUATOR _____ **Date** _____

	1	2	3	4
PROPOSED SOLUTIONS	Pave walks or stabilize them by other means.	Place wooden or metal walkways over stone paths.	Provide staff aid to push persons in wheelchairs around the site as needed.	Provide vehicle to transport visitors in wheelchairs around site. Provide assistance.
ACCOMMODATION BENEFIT	Independent access in integrated manner. +	Independent access in integrated manner. +	Integrated access with some loss of independence. +	Provides access to grounds and site. Tends to segregate. +
EFFECT ON HISTORIC FEATURES	Visual instrusion. Paving may be incompatible with historic fabric. −	Significant modern intrusion reversible. −	None +	Slight visual intrusion of modern vehicle on grounds. +
COST	$8,000 −	$2,000 −	None—unless more staff needed. +	? −
TIME	1 week +	1 week +	Slight +	? −
IMPACT ON NPS STAFF	None +	Slight +	Depends on number of visitors requiring assistance. Pushing may be difficult. −	May require staff to operate. −
SAFETY	Good +	May be slippery when wet. −	Safety of driving other person's specially equipped car. −	Good +
OTHER	None +	May require special removal of snow and ice. −	None +	Maintenance −
SUMMARY	Excellent access, but a visual intrusion.	Good access, but visual instrusion. Walkways may be difficult to maintain.	Significant impact on staff. Not all will be able to push wheelchairs over stones.	Versatile solution. Access to site *and* grounds. May require additional staff.
RECOMMENDATION	Other options are acceptable and less intrusive.	Least desirable—temporary, incompatible modern intrusion.	Non-intrusive, but unsatisfactory solution.	Explore to see if vehicle exists and feasibility.

CASE STUDY NO. 4: Vanderbilt Mansion National Historic Site, New York.

I. INTRODUCTION

This 19th-century palatial mansion is a "Living History" area. Built by the Vanderbilts, it is a magnificent example of the style of life of a wealthy American family.

This site was chosen for study, because the building contains a private residential elevator which is so small it does not allow a wheelchair to enter and maneuver properly. If usable, it would allow access to the basement and three upper floors. The elevator is especially important because entrance to the building may best be achieved through the basement entrance at the kitchen, since the front entrance has 12 stone steps. If this is the case, individuals in wheelchairs need to get from the basement to the main and upper floors once inside the building. This can only be done by elevator.

For purposes of this study, we will consider the problem of access to other floors from the perspective of an individual in a wheelchair. Modification of stairs to accommodate individuals who walk with instability and those with visual impairments has been discussed in Chapter 5, "Typical Solutions to Typical Problems."

II. CLASSIFICATION OF THE SITE

Significance:	National.
Reason for Significance:	Representative of the style of life of a 19th-century wealthy family.
Treatment:	Preservation.
Use or Function:	House museum.
Sector:	Public.
Yearly Visitation:	300,000.
Location:	Rural.
Staffing:	20 (summer), 10 (winter) for Vanderbilt and Roosevelt's home.

III. ACCOMMODATION PROBLEMS IDENTIFIED

A survey of the site using the Detailed Survey Checklist revealed the following problem related to access to other floors:

—once inside the building, all other floors are inaccessible to visitors in wheelchairs.

There are three means of access to the other floors:

—one stairway (magnificent and historically important) leading from the first floor to the second floor;

—one stairway leading from the second floor to the third floor;

—one servant's stairway leading from the first floor to the third floor;

—one residential elevator going from the basement to the first, second and third floors.

The residential elevator is 41 inches wide by 36¾ inches deep, with a door opening of 31½ inches. Most wheelchairs are 48 inches front to back and cannot fit into an elevator which is 41 inches wide. Even if the width were more than 48 inches, a wheelchair would have to make a 90 degree turn to fit inside the elevator sideways. A depth of 36¾ inches does not provide enough space for such a maneuver.

IV. PROPOSED SOLUTIONS

Careful analysis of the problem revealed the following alternate solutions:

—remove the entire servant's stairway and install a large elevator for the public;

—enlarge the shaft of the existing residential elevator and install a new and larger car for elderly and disabled visitors;

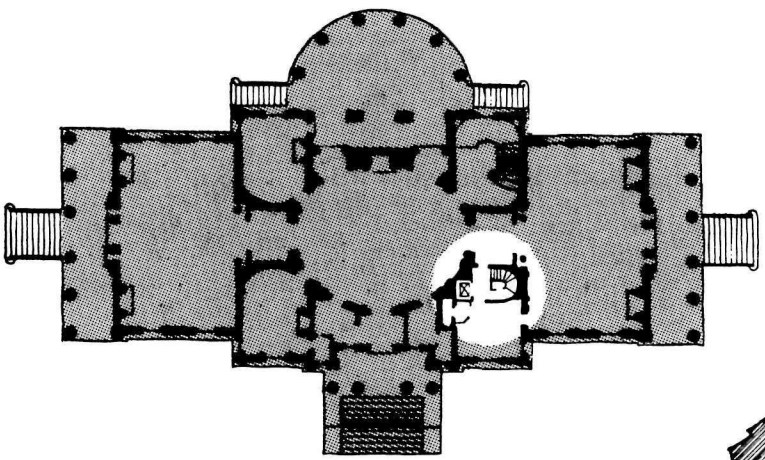
—install a closed circuit television system that would allow visitors to view other floors from the basement or from the visitor center;

—create an audio-visual presentation which depicts inaccessible areas with accompanying narrative;

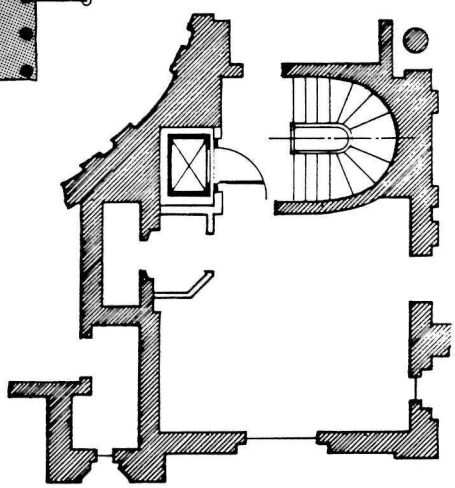
—locate this presentation in an accessible location.

A sketch of a portion of the first floor below reveals some detail about the existing servant's staircase and the residential elevator. Further field measurements by elevator consultants would be required to determine the adequacy of the open center well which houses the present staircase. Modification of the elevator shaft would involve removal of a small percentage of the stone pier surrounding the elevator.

The proposed solutions to this problem were then evaluated using the Accommodation Worksheet.



Vanderbilt Mansion first floor



Servants Stair & Elevator

Enlarged view of servants stair and elevator

V. DISCUSSION AND CONCLUSIONS

Analysis of the proposed solutions indicates that enlarging of the existing shaft and installing a larger elevator car should be explored in more detail before considering interpretive alternatives. The requirement that buildings have two means of egress would invalidate the solution of removing the servants staircase.

Such structural alterations to a building may seem extreme, yet considering the high yearly visitation and the prominence of the site as a cultural resource, it is important to explore all ways of allowing visitors in wheelchairs to gain access to *all floors.* Alterations to the elevator would entail irreversible damage to the historic elevator. At the same time, since the elevator is not normally used by the public and is kept closed, visual intrusion is minimized.

This case study was chosen to describe an unusual example of where a major structural alteration might be considered in preference to alternative accommodation.

The existence of a possible solution in the form of the residential elevator presents a challenge to the historical architect to evaluate the feasibility of such a solution. While this solution is being investigated, alternative accommodation in the form of a simple audio-visual presentation of inaccessible areas can and should be used as an interim solution. Such a presentation will be looked upon as a good faith effort to provide at least some accommodation.

ACCOMMODATION WORKSHEET
(Case Study No. 4)

HISTORIC SITE: VANDERBILT MANSION

ACCOMMODATION PROBLEM: Once inside the building, all other floors are inaccessible.

EVALUATOR _____ **Date** _____

	1	2	3	4
PROPOSED SOLUTIONS	Remove servant's stairway and install elevator.	Enlarge shaft of existing residential elevator and install new and larger car.	Install closed circuit television system to view other floors.	Create audio-visual presentation which depicts inaccessible areas.
ACCOMMODATION BENEFIT	Permanent solution. Independent access. Integrated setting. +	Permanent solution. Independent access. Integrated setting. +	Second hand experience. Should be used by all visitors. −	Second hand experience. Some integration if shown on site to all visitors. −
EFFECT ON HISTORIC FEATURES	Serious and irreversible destruction of historic fabric. −	Irreversible. Destruction of original elevator car but minimum intrusion on other features. −	Installation of cameras could be hidden partially, but still is modern intrusion. −	Varies. +
COST	80,000 −	70,000 −	20,000 −	?
TIME	3 months +	3 months +	1 month +	3 months +
IMPACT ON NPS STAFF	No staff assistance needed. +	No staff assistance needed. +	Requires staff to supervise visitor viewing area. +	Requires staff to show presentation.
SAFETY	May be illegal, two stairs are needed for exit. −	Slight +	Slight +	None +
OTHER	Requires maintenance. −	Requires maintenance. −	Requires maintenance. −	Slight +
SUMMARY	Major destruction. Significant intrusion. May be illegal—limits exit in emergency.	Expensive, but provides full access. Historic fabric is affected in minor way.	Second hand experience of site. Requires installation of equipment.	Second hand experience of site. May be of benefit to all visitors.
RECOMMENDATION	Reject this solution.	Further feasibility study is required by historical architect.	Is more realistic than audio-visual.	Consider as alternative to existing elevator.

APPENDIX I:

Selected devices to assist disabled persons.

The devices listed in this catalog were selected to assist specialists in providing accommodation for disabled visitors at historic sites. The catalog focuses primarily on those devices that help achieve accessibility, i.e., physical access to the site and its facilities. Devices for hearing and visually impaired persons are included to familiarize specialists with devices that assist in providing administrative and interpretive accommodations.

This catalog describes some typical devices in several areas. It is not an exhaustive list of all devices or all manufacturers.

The National Park Service does not endorse the products listed here nor does it recommend them over any other product not mentioned. Any omission of a manufacturer of a particular device is unintentional.

Other sources of manufacturer's literature include:

—local surgical supply houses;

—"Accent on Living Buyer's Guide" published by Raymond C. Cheever, (P.O. Box 700, Bloomington, IL 61701);

—publications of groups representing or serving disabled individuals.

Mobility Aids

Item	Company Address	Product Description
Ricon R30A Van Lift	Freewheel Vans, Inc. 16002 W. 4 Avenue Golden, CO 80404 (303) 278-2972	Electrohydraulic power. Lifts individual in wheelchair into van.
Electric Wheelchair	Everest & Jennings 3233 Mission Oaks Camero, CA 93010 (805) 987-6911	Model No. 3P (Batteries) 29″ wide
Manual Wheelchair	Everest & Jennings	Model No. 34 Wheelchairs can be made as narrow as 23″. The price will vary according to the size.
Executive 2001	Division of Kady-Kart, Inc. Mapletree Industrial Park Palmer, MA 01069	A dignified chair on wheels.
Amigo	Amigo Sales, Inc. Dept. AL-68 6693 Dixie Highway Bridgeport, MI 48722 (517) 777-0910	Amigo—battery operated Indoor only.
Portascoot	E.F. Brewer Company P.O. Box 159 Menomonee Falls, WI 53051	65000 ADJ Fiberglass Seat with Pneumatic Tires. 64000 Sling Style Seat 64050 Sling Style Seat with Pneumatic Tires.
Braun Tri-Wheeler	The Braun Corporation 1014 South Monticello Winamac, IN 46996 (219) 946-6157	Model No. JSM Model No. TSM Model No. RTM
PQ-22 Electric Wheelchair	Para Quad, Inc. 3614 West 2100 South Salt Lake City, Utah 84120	Electric Wheelchair
Voyager III	Voyager Ltd. P.O. Box 1577 South Bend, IN 46634	Similar to a one-person golf cart

Item	Company Address	Product Description
Golf Carts	Harley Davidson Motor Company 3700 West Juneau Milwaukee, WI 53208 (414) 342-4680	3 wheel with gas 3 wheel electric 4 wheel with gas 4 wheel electric
Fun Machines	Fun Country 29833 Ruby Road Evergreen, CO 80439 (303) 797-3618 Fun Country 3720 40th Street Court Moline, IL 61265 (309) 797-3618	Fun Machine, 6-wheel drive, 4 passenger seating. Travel over all terrain. (used models less than half price)
Volt Colt	Trans-Electric Engineering Company P.O. Box 701 Meridan, ID 83642	Cart carries individual in wheelchair. Wheelchair rolls directly onto platform.
Special Care Buses	Wayne Corporation P.O. Box 1447 Industries Road Richmond, IN 47374 (317) 962-7511	Transette 11-15 students Automatic Lifts Busette 11-15 persons Automatic Lifts Lifeguard 11-15 individuals Automatic Lifts

Ramps

Portable Product Series	Handi Ramp Inc. P.O. Box 745 1414 Armour Boulevard Mundelein, IL 60060 (312) 566-5861	For use in going from one level to another. There must be one foot in length for every inch in height. No skid treadway 26″ × 60″ Safety wheel guides 26″ × 84″ Self cleaning 26″ × 120″
Wheel-O-Vator	Toce Brothers Manufacturing, Ltd. P.O. Drawer F Youngsville, LA 70592	No. 8SA No-skid skanner plate 38″ from curb No. 6S 6′ long for 6″ curb No. 6SA reversible platform for left or right exit. No. 8S Direct access 8′ long

Lifts

Item	Company Address	Product Description
Butler Wheelchair Lift	Flinchbaugh/Murray Corporation 390 Eberts Lane York, PA 17403 (717) 854-7720	Used to raise individuals from one level to another. (Indoor and outdoor units available.)
Econo Lift "200"	Earl's Stairway Lift Corporation 2413 AB Center Street Cedar Falls, IA 50613 (319) 277-4777	Used to raise an individual and their wheelchair from one level to another. (Indoor and outdoor units available.)
Stairway Porch Lift	Earl's Stairway Lift Corporation	For outside use in raising an individual from one level to another.
Cheney Wheelchair Lift	The Cheney Company 3015 South 163rd Street New Berlin, WI 53151 (414) 782-1100	Used to raise an individual and their wheelchair from one level to another.
Wheel-O-Vator	National Wheel-O-Vator Co. Inc. P.O. Box 1308 Patterson, LA 70392 (800) 551-9095	Used to raise an individual and their wheelchair from one level to another.
Porch Lift	American Stair Glide Corporation 4001 East 138th Street Grandview, MO 64030 (816) 763-3100	Used to raise an individual and their wheelchair from one level to another. (Outside use only.)
Econo-Glide	American Stair Glide Corporation	Assists in raising individual from one level to another.
Earl's Stair Ride "100"	Earl's Stairway Lift Corporation 2413 AB Center Street Cedar Falls, IA 50613 (319) 277-4777	Assists in raising individuals from one level to another.
Inclinator	Inclinator Company of America 220 Paxton Street Harrisburg, PA 17105	Assists in raising individual from one level to another.
Inclinette	CMC Residential Elevator Company 51 Dover Terrace Westwood, MA 02090	Assists in raising individuals from one level to another.
Stair Glide Deluxe	American Stair Glide Corporation 4001 E. 138th Street Grandview, MO 64030	Assists in raising individuals from one outdoor level to another.
Wecolator	The Cheney Company 3015 South 163rd Street New Berlin, WI 53151 (414) 782-1100	Assists in raising individuals from one level to another. For *curved, spiral* or *straight* stairs. (13 steps)

Item	Company Address	Product Description	
Stair Lift	Inclinator Company of America 220 Paxton Street Harrisburg, PA 17105	Assists in raising individuals from one level to another.	
Stair Glide	American Stair Glide Corporation 4001 East 138th Street Grandview, MO 64030 (816) 768-3100	Assists in raising individuals from one level to another.	
Garaventa Inclined Stair Lift	Garaventa, Ltd. P.O. Box L1 Blaine, WA 98230 (604) 594-0422	Raises individual up as much as three complete stories (4 floors). Can be installed without damage to historic fabric.	
Commercial Elevators	Otis Elevator Company Northeastern Region 275 Hancock Street North Quincy, MA 02171	Prices vary according to building and size.	**Elevators**
Commercial Passenger Elevator	Beckwith Elevator Company 8 St. Mary's Street Boston, MA (617) 267-6006	Runs up to three floors.	
Econo Lift "500"	Earl's Stairway Lift Corporation 2413 AB Center St. Cedar Falls, IA 50613 (319) 277-4777	Economical small elevator, 2-5 stops available. Accessible to wheelchairs. (2 stops)	
Elevette	CMC Residential Elevator Company 51 Dover Terrace Westwood, MA 02090	Small, convenient elevator for raising an individual from one to more floors. Accessible to wheelchairs.	
"Elevette"	Inclinator Company of America 220 Paxton Street Harrisburg, PA 17105	For raising an individual from one level to another. Accessible to wheelchairs.	
The Easy Access	Horton Automatics Overhead Door Corp. 6250 LBJ Freeway Dallas, TX 75204 (214) 233-6611	Automatic door button	**Door Operating Equipment**
Automatic Door Operators	Keane Monroe Corp. P.O. Box 1071 Monroe, NC 28110 (704) 289-5581	Series 100. Can be used on swinging doors, sliding doors, etc. Controlled by pushbutton.	
Power Assist Door Opener	Dorma Door Control Dorma Drive Reamstown, PA 17567 (215) 267-3881 TWX 510-651-4527	Series 1020 Light Touch	
Automatic Door Opener		Series 1010 Automatic	

	Item	Company Address	Product Description
	Door Opener	Power Access Corp. Box 139 Eatontown, NJ 07724	Opens door by remote control or by switch.
	Silent Swing	Stanley Door Operating Equipment Division of the Stanley Works Farmington, CT 06032 (203) 677-2861	Opens door by remote control or switch.
	Environmental Control System	Prentke Romich Co. R.D. 15 8769 Township Road Shreve, OH 44676 (216) 567-2906	Opens door by remote control or switch.
	Series 1010	Dorma Door Control Dorma Drive Reading Door Closer Corp. Reamstown, PA 17567 (215) 267-3881	"Easy Access"—"Lite Touch" Pneumatic Power Opening, Hydraulic Closing Door Controls.
Toilet Fixtures	Handi John	Braun Fiberglass Products Division of the Braun Corporation P.O. Box 547 East 4th Street Rochester, IN 46975 (219) 223-3101	Accessible portable restroom.
	Handrails and Grab Bars	AMCO Medical Service 11329 N. Central Expressway Dallas, TX 75231	Toilet Compartment Rails: Inclined Bars Toilet Straddle Bars Wall to Floor with Outrigger.
	Toileting Aids	AMCO Medical Service	MO41105 Toilet Assist MO41100 Toilet Armrest MO41107 Toilet Aid with Adjustable width MO41108 Toilet Safety Frames Adjust and non-adjustable
	1″ Diameter Grab Bars	E.F. Brewer Company 13901 Main Street Menomonee Falls, WI 53051 A. 28012-2 12″ × 5″ × 1″ B. 28018-2 18″ × 5″ × 1″	C. 28024-2 24″ × 5″ × 1″ D. 28032-2 32″ × 5″ × 1″ E. 28048-2 48″ × 5″ × 1″ E. 28052-2 Corner Rail 25″ × 25″ × 1″ F. 28064-1 Swing Away Bath Seat

Item	Company Address	Product Description
Adjustable Toilet Safety Rails	Edco, Inc. Box 328 125 South Street Passaic, NJ 07055 (201) 472-3173	Made of durable 1″ polished aluminum tubing. 6004 Rails 6005 Toilet Guards
Decorator Grab Bars	Lumex, Inc. 100 Spence Street Bay Shore, NY 11706	Available in several sizes, types, and colors.
Stainless Steel Handrail	Tubular Specialities Manufacturing, Inc. 8110 S. Beach Street P.O. Box 71527 Los Angeles, CA 90001	Railing system, grab bars. Mechanically attached flange series, etc.

Door Hardware

Plastic Door Knob Extension	Fred Sammons, Inc. Box 32 Brookfield, IL 60513	This set of four door knob levers attaches with a special pressure sensitive tape to door knobs, and allow those who lack grasp or strength to open doors easily. Works best on thicker cylindrical knobs. BK-6395-Package of 4
Steel Door Knob Extension	Fred Sammons, Inc.	A steel extension handle that attaches to any round door knob to provide leverage for easier opening. Comes with slotted back washer and three mounting screws. BK-6396
Med Hinges	M.E.D., Inc. 1275 South Harlem Avenue Forest Park, IL 60130	MED hinges are installed without damage to doors or door sills and allow the door to close flat against the wall. Space is gained by the elimination of the door protruding into the doorway as it does with normal hinges. MO5 6050

Water Fountains and Coolers

Water Fountain	EPCO Manufacturing Co. 265 North Hamilton Road Columbus, OH 43213 (614) 861-1350	Model DP7WM. Pipes must already be accessible.
Drinking Fountain	King-Seely Tagimos Co. Route 75 Freeport, IL 61032 (815) 235-0066	Model 6800W. Stainless Steel, can be placed outside.

Item	Company Address	Product Description
Water Cooler	EPCO Manufacturing Co.	Model WC7A1

Devices for Visually Impaired Persons

	National Braille Press 88 St. Stephen Street Boston, MA 02115 (617) 742-0937	Will reproduce materials suitable for visually impaired individuals.
Print Braille Materials	American Printing House for the Blind P.O. Box 6985 Louisville, KY 40206 (502) 895-2405	Textbooks, brochures, menus, etc. (minimum of 25 copies required)
	Gilligan Tactiles West Newton, MA 02165	Prepares tactile emergency exit plans and site maps in Braille.
Sonicguide	Telesensory Systems, Incorporated 455 North Bernardo Mountain View, CA 94043 (415) 960-0920	Mobility aid for blind travellers. Indicates distance, location, and surface characteristics.
Monwat Sensor	Telesensory Systems, Incorporated	Hand held electronic travel aid, clear path indicator, and orientation aid. Vibrates.
The Optacon Reading Machine	Telesensory Systems, Incorporated	Converts the image of a printed letter into a vibrating tactile form that a blind person can feel with one finger.
Model LT6 3M	National Institute for Rehabilitation Engineering 97 Decker Road Butler, NJ 07405 (201) 838-2500	For reproducing letters in a large type
Portable Electric Typewriter	National Institute for Rehabilitation Engineering	Illuminated optical magnifiers.
Typing Element	Royal Business Machines 621 Farmington Avenue Hartford, CT 06151 (203) 236-2354	Type no. 102. (large type)
Sight Saver Typewriter	SCM Corporation Consumer Products Division 299 Park Avenue New York, NY 10171 (212) 752-2700	Bulletin Gothic, no. 29 (large type)
RS 6	Visualtek 1610 26th Street Santa Monica, CA 90404 (213) 829-6841	Gives a greatly magnified image of writing, books, and you as you are writing.

Item	Company Address	Product Description	
			Signs
"Parking Ticket Reminders"	The Mobility Barriers Section 830 K Street Mall Sacramento, CA 95814	5" × 3" parking reminders for use on illegally parked in spaces reserved for handicapped individuals.	
Signs	Seton Name Plate Corporation 20 Thompson Branforg, CT 06405 (203) 772-2520	Will make any accessibility sign requested.	
Braille and Raised Print	ARTS Associates, Inc. 80 Boylston Street Boston, MA 02166	Braille and raised print. Three signs in one.	
			Devices for Hearing Impaired Persons
Portatel	Specialized Systems, Inc. 215 South Highway 101 Suite 203 Solana Beach, CA 92075 (714) 814-6000	Operated like a typewriter through an ordinary phone receiver to another phone receiver.	
Visual Ear	Rentronics, Inc. 2395 Bayview Avenue Willowdale, Ontario M2L 1A2 447-5391	Operated like a typewriter through an ordinary phone receiver to another phone receiver.	
Magsat	Magsat Corporation 56 Arbor Street Hartford, CT 06106	Operates like a typewriter through an ordinary phone receiver to another phone receiver.	
TV Phone	Phonics Corporation 814 Thayer Avenue Silver Spring, MD 20910	Similar to above with television screen display	
Manual Communications Module/Dual Display	Micon Industries 252 Oak Street Oakland, CA 94607	Allows face to face communications, with or without telephone access. Uses a dual display board on each unit.	
	Dr. Malcolm J. Norwood Chief of Captioned films and Telecommunications Branch Donohoe Building U.S. Office of Education 400 Maryland Avenue, S.W. Washington, DC 20202 (202) 472-1164	National Captioning Center will do captioning for anyone.	
	Pilgrim Film Services 2504 50th Avenue Hyattsville, MD 20781	Caption 16mm and 35mm films and 35mm slides for deaf.	
Telephone Amplifier	Bell Telephone Company (local)	Inserted into the phone receiver.	

APPENDIX II:
Selected laws, regulations, and policies affecting accessibility for disabled individuals at National Park Service historic sites.

THE ARCHITECTURAL BARRIERS ACT OF 1968 (PUBLIC LAW 90-480, AS AMENDED)

SUMMARY

This law affects buildings or portions thereof intended for use by the public and those buildings which may involve use by physically handicapped individuals as employees or residents. Specifically, buildings or facilities constructed, altered, leased or financed by the Federal government or a Federal grant since August 12, 1968 are subject to the provisions of this statute. The Administrator of General Services, in consultation with the Secretary of Health and Human Services, is required to establish standards for the design, construction, or alteration of buildings to insure, whenever possible, that physically handicapped persons will have ready access to, and use of, such buildings. The design, construction, or alteration of any such building after August 12, 1968 must be in accordance with these standards.

DISCUSSION

The law defines the term "building" as any building or facility that is intended for use by the public or may result in the employment or residence of physically handicapped persons. Privately owned residential structures not leased by the Government for subsidized housing programs and buildings or facilities on military installations constructed primarily for use by able bodied military personnel are excluded.

Section 2 requires the Administrator of General Services in consultation with the Secretary of Health, and Human Services to prescribe standards for the design, construction, and alteration of buildings to insure, whenever possible, that physically handicapped persons will have ready access to, and use of, such buildings. Such standards do not apply to residential structures, facilities of the Department of Defense and of the United States Postal Service. Such structures and facilities are covered by other standards issued by the Secretary of Housing and Urban Development, the Secretary of Defense, and the United States Postal Service.

In the case of National Park Service (NPS) administered buildings, the General Services Administration (GSA) may modify or waive any such standard on a case by case basis upon application by the Director and determination by the Administrator that such a modification is clearly necessary.

Section 6 of the Act requires that a system of continuing surveys and investigations be established to insure compliance with the appropriate standards.

Section 7 requires the Administrator of General Services to report annually to Congress on GSA activities and the activities of other departments, agencies, and instrumen-

talities. It also requires the Architectural and Transportation Barriers Compliance Board (see section 502 of the Rehabilitation Act of 1973) to report annually to the House of Representatives and the Senate concerning its activities for insuring compliance with the standards prescribed under the statute.

IMPACT This law is the cornerstone of accessibility for handicapped individuals at the Federal level. It establishes the mandate to make public buildings constructed after 1968 accessible to handicapped individuals. The Federal Property Management Regulations (41 CFR Subpart 101-19.6), published by the General Services Administration, define the extent of the applicability of this law.

Historic buildings are not covered by the laws unless and until they are altered.

SECTION 502 OF THE REHABILITATION ACT OF 1973, (PUBLIC LAW 93-112, AS AMENDED)

SUMMARY The Rehabilitation Act of 1973 sets forth a broad range of services and basic civil rights for handicapped individuals. Section 502 of the Act establishes the Architectural and Transportation Barriers Compliance Board (ATBCB). One function of the ATBCB is to insure compliance with the standards prescribed by General Services Administration and other Federal agencies. It also has data gathering and reporting requirements.

DISCUSSION The board is made up of representatives from eight executive branch departments. The functions of the board are:

1. To insure compliance with the standards prescribed by the General Services Administation (GSA), the Department of Defense (DOD), and the Department of Housing and Urban Development (HUD) under the Architectural Barriers Act;
2. To investigate and examine alternative approaches to architectural barriers, transportation barriers, and attitudinal barriers regarding accessibility in public buildings and monuments, parks and parklands, transportation, and housing;
3. To determine what measures are being taken by Federal, State, and local governments and agencies to eliminate barriers;
4. To promote proper use of the International Symbol of Accessibility;
5. To report progress to the President and to Congress; and
6. To make recommendations to the President and to Congress.

The board also determines problems and progress in transportation and housing for handicapped people. It also is empowered with the duties of conducting investigations and hearings and of issuing orders to insure compliance with The Architectural Barriers Act.

IMPACT Section 502 gives the Architectural and Transportation Barriers Compliance Board the authority to enforce the standards prescribed by GSA, DOD, and HUD under the Architectural Barriers Act. To date, the ATBCB has used this authority to investigate selected complaints concerning public buildings and potential areas of noncompliance with the Barriers Act. With respect to the General Services Administration, the ATBCB oversees GSA's administration of the Federal Property Management Regulations regarding handicapped accessibility and acts as a final arbitrator if complaints are brought. Day to day enforcement of the GSA accessibility regulations and maintenance of a waiver procedure is left up to that agency.

SECTION 504 OF THE REHABILITATION ACT OF 1973 (PUBLIC LAW 93-112 AS AMENDED BY PUBLIC LAW 95-602).

SUMMARY

This section of the Rehabilitation Act prohibits discrimination against a handicapped individual solely by reason of a handicap in any program or activity receiving Federal financial assistance or any program or activity conducted by an agency of the executive branch of the Federal government.

DISCUSSION

If a program or activity discriminates against an otherwise qualified individual solely on the basis of that person's handicap, then it is possibly in violation of Section 504. It is important to note that the discrimination must exist in a program or activity. Generally accepted definitions of programs indicate that a program, when viewed in its entirety, must be readily accessible to handicapped persons.

This does not require that each and every part of an existing facility be made accessible to and usable by handicapped persons.

IMPACT

This section requires nondiscrimination in Federal programs when such programs are viewed in their entirety. This section does not require that each interpretive or other program be accessible, merely that the program when viewed as a whole, provide interpretive opportunities for handicapped.

FEDERAL PROPERTY MANAGEMENT REGULATIONS, "ACCOMMODATIONS FOR THE PHYSICALLY HANDICAPPED" (41 CFR SUBPART 101-19.6).

SUMMARY

41 CFR 101-19.6 implements GSA's regulations under the Architectural Barriers Act. The regulations govern buildings constructed, leased or altered by or on behalf of the Federal government after September 2, 1969. All buildings owned by the National Park Service or those under the jurisdiction of the General Services Administration used by the NPS are affected by those regulations. Park Service historic sites in the process of being altered must have design, construction, or alteration of certain portions of buildings performed in accordance with the minimum standards set forth in the GSA standards or be exempted from such standards.

DISCUSSION

Subpart 19.6 applies to buildings which are:

1. Constructed or altered by or on behalf of the Federal government after September 2, 1969;
2. Leased in whole or in part by the Federal government between August 12, 1968 and December 31, 1976, if constructed or altered in accordance with plans and specifications of the Federal government;
3. Leased in whole or in part by the Federal government after January 1, 1977;
4. Financed, in whole or in part, by a Federal grant or loan made after August 12, 1968 for the purpose of design, construction, or alteration; and
5. Constructed under certain transportation acts.

The term "alteration" is defined as repairing, improving, remodeling, extending, or otherwise changing a building.

The subpart does not apply to:

1. Construction, alteration, or lease of a building or portion thereof not intended to be used by the public or by physically handicapped persons;
2. Alterations to a building which do not involve areas used by the public or are not likely to accommodate physically handicapped individuals;
3. If application of the standards is not structurally possible;
4. If building plans and specifications were completed before September 2, 1969; and
5. If no accessible facilities are available for lease.

GSA will consider waivers or modifications of the standards on a case by case basis (41 CFR 101-19.605). The Director, NPS must apply to GSA for a waiver and the Administrator of General Services may grant such a waiver if the modification is clearly necessary.

IMPACT Coverage Most historic sites are owned or managed by the National Park Service. Few are managed directly by the General Services Administration. The standards above apply to both GSA and Park Service buildings. Historic sites, because they were built before 1969, are not subject to the standards unless, or until, they are altered, and only if the alteration affects areas used by the public or by physically handicapped persons.

Meaning of Alteration As used in the regulations, alteration does not cover what the Park Service considers as preservation, but it may include restoration and reconstruction.

Waivers and Departures from the Standards The regulations allow that waivers may be granted by GSA for the applicability of the standards.

This provision is especially important with respect to historic sites. The Park Service can approach GSA on a case by case basis to have provisions of the standards waived or modified. Modification of standards is mentioned in the regulations which state, "Departures from particular requirements of these standards by the use of other methods will be permitted when it is evident that equivalent accessibility and useability of the facility are provided." (41 CFR 101-19.693.)

At present, the Government Services Administration must rule on every departure from its standards. There is no current provision for a blanket waiver of all standards or blanket modification of standards, so each departure will require review by GSA. Standards in the "American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped," published by the American National Standards Institute Inc. (ANSI), apply to buildings designed, constructed, or altered prior to the effective date of the GSA Accessibility Standard of October 14, 1980.

GENERAL SERVICES ADMINISTRATION ACCESSIBILITY STANDARD

SUMMARY The GSA Accessibility Standard provides the minimum standards for accessibility in the design, alteration, or construction of Federal buildings and facilities to accommodate the physically handicapped. The effective date of this standard is October 14, 1980. This standard replaces the ANSI standard which was previously applicable.

DISCUSSION This standard was adopted by the GSA in lieu of the ANSI standard because:

1. The ANSI standard was often difficult to use and understand in its present format;
2. The ANSI standard used too much unnecessary detail;
3. The ANSI standard included criteria not yet fully developed which could not be enforced (i.e., carpeting and tactile warnings); and
4. In some instances, the ANSI standard did not go far enough to ensure adequate accessibility.

IMPACT This is now the applicable standard for use by the NPS in altering historic sites. The GSA standard is not as complex nor does it require some elements as the previously used ANSI standard.

ANSI A117.1-1961 (R1971)—AMERICAN NATIONAL STANDARD SPECIFICATIONS FOR MAKING BUILDINGS AND FACILITIES ACCESSIBLE TO, AND USABLE BY, THE PHYSICALLY HANDICAPPED.

SUMMARY The "ANSI Standards" specify standards for portions of buildings and sites that are used by the public. The purpose is to make all buildings and facilities used by the public accessible to, and functional for, physically handicapped individuals without loss of function, space, or facility where the general public is concerned. These standards apply to work prior to the effective date of October 14, 1980 of the GSA standards.

DISCUSSION

The standard applies to all buildings and facilities used by the public. Temporary or emergency conditions are covered as well as permanent conditions. Private residences are not covered.

The standards note that "In cases of practical difficulty, unnecessary hardship, or extreme differences, administrative authorities may grant exceptions from the literal requirements of this standard or permit the use of other methods or materials, but only when it is clearly evident that equivalent facilitation and protection are thereby secured," (Sec. 1.2).

The standards call for an appropriate number of toilet rooms, water fountains, and public telephones. The term "appropriate number" is defined as the number of an item that would accommodate individuals with specific disabilities in proportion to the anticipated number of such individuals who would use a particular building or facility.

IMPACT

The ANSI standards were referenced by the Federal Property Management Regulations (41 CFR Subpart 101-19.6) as the standards which applied to construction, alteration, or lease of buildings by and for the Federal government after September 2, 1969. They were the effective standards until October 14, 1980.

THE IMPACT OF ACCESSIBILITY LAWS, REGULATIONS, AND POLICIES ON HISTORIC PRESERVATION

The key document concerning accessibility for handicapped individuals at historic sites is the Federal Property Management Regulations (41 CFR-Subpart 101-19.6). The regulations were issued under The Architectural Barriers Act of 1968, (Public Law 90-480, as amended.) This law directed that the General Services Administration issue regulations affecting government owned buildings intended for use by the public or by physically handicapped employees and residents. An amendment to the regulations on April 19, 1978 made leased buildings subject to the same provisions.

The GSA Federal Property Management Regulations apply to new construction, leased buildings, and alteration of existing buildings. The area of concern is buildings intended for use by the public or those buildings used by physically handicapped employees and residents.

Although GSA has issued rules on waivers of standards, the ultimate enforcement of the regulations and the Architectural Barriers Act lies with the Architectural and Transportation Barriers Compliance Board. This Board, created by Section 502 of the Rehabilitation Act of 1973 (Public Law 93-112, as amended), oversees the enforcement of the law and addresses matters of policy.

APPENDIX III: Selected laws, regulations, and policies affecting historic preservation.

THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (PUBLIC LAW 91-190)

SUMMARY

The National Environmental Policy Act (NEPA) directs Federal agencies to take environmental consequences into account when planning actions or developing policies. Under the provisions of NEPA, Federal agencies must prepare environmental impact statements for Federal actions significantly affecting the quality of the human environment. The statements must identify and discuss environmental effects of a proposed action and compare alternatives to the action. Environmental analysis should include a discussion of historic sites, buildings, and properties on or eligible for listing in the National Register of Historic Places.

DISCUSSION

NEPA is an integral part of the Park Service's planning process. Environmental documents are produced for General Management Plans (GMP's) and actions in parks not covered by GMP's having appropriate environmental documentation. Accessibility for disabled individuals should be discussed in documents concerned with alterations to historic sites on or eligible for listing in the National Register of Historic Places.

IMPACTS

Alterations to properties listed in or eligible for inclusion in the National Register of Historic Places may require the preparation of an environmental document under the provisions of NEPA. Service compliance with accessibility should be shown in the NEPA documents dealing with historic site alterations.

THE NATIONAL HISTORIC PRESERVATION ACT OF 1966 (PUBLIC LAW 89-665, AS AMENDED)

SUMMARY

This law directs the Secretary of the Interior to expand and maintain the National Register of Historic Places; establishes the Advisory Council on Historic Preservation; requires Federal agencies to provide the Advisory Council an opportunity to comment prior to undertaking any activity having an effect on a property in, or eligible for inclusion in, the National Register; requires Federal agencies to nominate properties which may be eligible for the National Register; and provides assistance and avenues of participation for State and local governments.

DISCUSSION The National Historic Preservation Act (NHPA) authorizes the Secretary of Interior to:

1. Expand and maintain a National Register of Historic Places;
2. Establish a program of grants to States and organizations to foster historic preservation programs; and
3. Allow the withholding of certain information concerning sites and objects listed in the National Register, since disclosure of some of this data would create a risk of destruction or harm to such sites or objects.

Section 106 of NHPA requires the head of any Federal agency to consider the effect of any undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The agency head shall give the Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to the undertaking. This is known commonly as the 106 review process.

The Act establishes the Advisory Council on Historic Preservation as an independent Federal agency. The regulations adopted by the Council which implement provisions of the NHPA are found in 36 CFR 800.

IMPACT Compliance with Section 106 of NHPA is a prerequisite to undertaking modifications which have an effect on properties eligible for or in the National Register of Historic Places. Actions which do not have an effect on the physical characteristics of the property but which may have an impact on the historic scene may also require 106 compliance. Contact should be made with the regional cultural resources specialists for assistance in completing the requirements of the Act.

EXECUTIVE ORDER 11593 PROTECTION AND ENHANCEMENT OF THE CULTURAL ENVIRONMENT

SUMMARY The 1971 Executive Order reinforces the Federal government's overall commitment to historic preservation. The Executive Order requires Federal agencies to inventory their properties for possible placement on the National Register of Historic Places. The Secretary of Interior is instructed to issue procedures to implement the order.

DISCUSSION This document instructs Federal agencies to preserve, restore, and maintain historic and cultural resources for the inspiration and benefit of the people. It also sets forth procedures and timetables for locating, inventorying, and nominating historic sites, buildings, districts, and objects to the National Register of Historic Places. Procedures for recordkeeping, maintenance through preservation, rehabilitation, or restoration are also established.

IMPACT The Executive Order strengthens the effects of the original Historic Preservation Act of 1966 by reinforcing the mandate for preservation and restoration and by setting forth responsibilities of Federal agencies and the Secretary of the Interior. The order sets certain procedures and standards into motion concerning inclusion of sites, buildings, etc. in the National Register. Prior to the modifications of a building which may be eligible for listing in the Register, a determination of eligibility must be sought.

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36 CFR Part 800 PROCEDURES FOR THE PROTECTION OF HISTORIC AND CULTURAL PROPERTIES.

SUMMARY These regulations issued by the Advisory Council on Historic Preservation set forth procedures implementing Section 106 of the National Historic Preservation Act. Federal agencies must follow these regulations when properties included in or eligible for the National Register are involved in a project. Compliance with these regulations is required prior to undertaking any alteration regarding modifications for accessibility in historic sites or other modifications of National Register properties.

DISCUSSION

In adopting these regulations in January of 1979, the Advisory Council on Historic Preservation stated the following as the purpose of the regulations:

> As implemented through these regulations, Section 106 process is a public interest process in which the Federal agency proposing an undertaking, the State Historic Preservation Officer, the Council and interested organizations and individuals participate. The process is designed to assure that alternatives to avoid or mitigate an adverse effect on a National Register or eligible property are adequately considered in the planning processes. The regulations are binding on all Federal agencies and specify the manner in which the Council will render its comments to Federal agencies when their undertakings affect properties included in or eligible for inclusion in the National Register of Historic Places. To facilitate processing of the large volume of cases submitted for Council comment each year, the regulations provide for agency consultation with the Council staff and State Historic Preservation Officers to reduce the number of undertakings that require consideration by the full Council.

Both the criteria of effect and criteria of adverse effect are discussed in the regulations. An effect, among other things, may be beneficial or adverse, direct or indirect, and occurs when an undertaking changes the integrity of the location, design, setting, materials, workmanship, feeling, or association of the property that contributes to its significance in accordance with the National Register criteria. Adverse effects include but are not limited to:

1. Destruction or alteration of all or part of the property;
2. Isolation from or alteration of the property's surrounding environment;
3. Introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting;
4. Transfer or sale of a Federally owned property without adequate restrictions regarding preservation, maintenance or use; and
5. Neglect of a property resulting in its deterioration or destruction.

Federal, State and Council responsibilities are outlined and established by those regulations as well as coordination with NEPA and execution of a Programmatic Memorandum of Agreement.

PROGRAMMATIC MEMORANDUM OF AGREEMENT BETWEEN THE NATIONAL PARK SERVICE AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

SUMMARY

The provisions of this document shift the major portion of the Advisory Council on Historic Preservation review and comment under Section 106 from the project stage to the planning stage.

DISCUSSION

During participation early in the planning, the Council and the State Historic Preservation Officers exercise their opportunity to comment in accordance with Section 106. Subsequent actions carried out under the plan that have an effect upon a property or properties included in or eligible for the National Register and were adequately addressed in the plan will be considered to have no adverse effect or to have had the adversity satisfactorily mitigated, and may be carried out without further referral to the Council and the State Historic Preservation Offices.

The following conditions would require comment from the Advisory Council:

1. It is determined that an individual action may have an adverse effect on a property and the effect was not considered in the plan;
2. An action is altered, inconsistent or otherwise departs from the approved plan; and
3. Basic planning documents have not been developed and the Council has not been afforded an opportunity to comment at the time the action is proposed.

The National Park Service must follow professional standards as in NPS-28 in implementing its actions under the provisions of this agreement. The Service must also maintain adequate documentation and make such documentation available to the Council. The Council or State Historic Preservation Officer still retains the right to object, in a timely fashion, to any implementing action that it determines may be an adverse effect not fully considered in the plan.

IMPACT

General Management Plans developed under the provisions of the Memorandum of Agreement should include provision for disabled accessibility to historic sites. If a GMP, approved under the provisions of the Memorandum of Agreement, contains provisions for accessibil-

ity, then those aspects which are approved by the Council in commenting on the plan may then be undertaken without a further return to the provisions of 36 CFR 800.

NPS MANAGEMENT POLICIES

SUMMARY The *Management Policies* for the National Park Service give the general direction for management of units in the National Park Service.

DISCUSSION The *Management Policies* include general policy directions for guiding management of cultural resources and provision of facilities for disabled individuals.

The section dealing with facilities for the disabled visitors (III-7) recognizes the impact of accessibility legislation. It also states that park design should facilitate the goal of enjoyment of park resources to the greatest extent possible commensurate with the physical limitations of disabled visitors.

In providing for disabled accessibility in historic sites, the visual effect of handrails and wheelchair paths "shall be limited."

Chapter V of the *Management Policies* is devoted to "Cultural Resource Management and Preservation." The general policies contained in the chapter are further expanded in the guidelines contained in NPS-28.

IMPACT The *Management Policies* should be examined prior to undertaking actions designed to modify a historic site in order to provide for disabled visitors.

NPS-28 "CULTURAL RESOURCES MANAGEMENT GUIDELINE"

This guideline is derived from the general directions established in the *Management Policies*. It sets directions for implementing actions which may have an impact on cultural resources and establishes standards for Park Service cultural resources management.

DISCUSSION This guideline establishes the general and base requirement for implementing actions and planning for use of cultural resources. It contains Servicewide standards for the treatment, preservation, and use of cultural resources management as well as day to day management activities.

IMPACTS This document should be looked to for guidance in undertaking any activities that provide access for the disabled visitor at historic sites. It provides basic information on the implementation of laws governing those Federal activities having an impact on cultural resources.

THE IMPACT OF HISTORIC PRESERVATION LAWS, REGULATIONS AND POLICIES ON ACCESSIBILITY

The National Park Service is strictly mandated to preserve cultural resources and provide for current and future public appreciation of these resources. The National Park Service Organic Act of 1916 and several other pieces of legislation instruct the Service to preserve architectural fabric and historical integrity. In addition, the Park Service implements Executive Order 11593 and regulations which ensure preservation. Management and planning procedures for preservation are clearly stated in the agency's management guidelines as discussed above.

The statutes recognize that protecting cultural resources involves reconstruction, restoration, and ongoing preservation. Cultural resources are thus protected by strict planning guidelines in the general context of legislated

preservation. Protection and preservation are the fundamental assumptions of cultural resources planning.

The mandate for preservation is strong and specific. Planning procedures, however, provide a vehicle for considering the impact of a proposed action on historic integrity, and assessing alternative methods of achieving a necessary action (i.e., fire safety, visitor facilities such as drinking fountains, etc.) It is during this planning process that accessibility at historic sites should be incorporated. This process must be integrated with the 106 process in order to avoid solutions unacceptable in terms of historic preservation compliance.

The limits of the preservation mandate are also important to consider. Planners must bear in mind that preservation legislation does *not* cover visitor centers or modern facilities which accompany the historic site, e.g., drinking fountains or bathrooms located nearby. Planners must also acknowledge their legislated responsibility to provide for appreciation of cultural resources by *all* visitors. Disabled visitors must not be excluded from National Park Service sites. Planning should identify precisely where preservation and accessibility intersect and conflict. Creative alternative solutions must be defined with the help of managers, historical architects, specialists for the disabled, and disabled individuals (or consumer representatives). These alternatives must then be carefully evaluated according to the criteria of accessibility benefit and historic preservation.

APPENDIX IV:
Summary of selected laws, regulations, and policies affecting accessibility for disabled individuals at National Park Service historic sites and historic preservation.

When accessibility and preservation laws conflict in the administration of a historic site, managers and others are called upon to exercise flexibility and creativity. Quite often, administrative solutions can be found, such as using alternative tour routes when mobility-impaired visitors are in attendance. Careful planning, consultation with disabled individuals, specialists for the disabled, and historical architects can help to identify such solutions.

When government funds are to be expended in the alteration of buildings, an examination must be made of the expenditures to see if the funds are to be spent on the modification of stairs, entrances or like elements which may be susceptible to modifications for disabled accessibility. At this point, the manager, a historical architect, a specialist for the disabled, and disabled individuals should be brought together to determine if an acceptable method of alteration can be made to the structure which would provide for accessibility while retaining the integrity of the site. If such an accommodation cannot be made, exemption of the accessibility requirements should be sought from GSA.

When alterations are not proposed, an examination of the general visitor service program should be made to determine the strengths and weaknesses in the programs available to the disabled. If an especially important interpretive or other service is currently being provided in an unaccessible site, alternative areas for delivery of that service should be provided.

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NATIONAL PARK SERVICE/USDI

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DETAILED SURVEY CHECKLIST

Detailed Survey Checklist

This form should be used to make a survey of the site. Specialists should check 41 CFR Subpart 101-19.6 to determine what are the General Services Administration's current standards so that they can be included in the checklist. The National Park Service will publish a Detailed Survey Checklist upon adoption of final standards by GSA.

Directions for Using the Detailed Survey Checklist

The first two columns of this checklist contain information about accessibility.

The column labeled "STANDARD" should contain questions that are based on the current legal minimum standards as adopted by the General Services Administration.

The column labeled "ADDITIONAL TECHNICAL INFORMATION" should contain information which will assist specialists in making an accurate survey.

1. Circle the word "Historic" or "Non-Historic" found in the "STANDARD" column under each section heading.

2. Write an appropriate question under the "STANDARD" column.

3. Check one of the narrow columns to the right, according to the following:

Check "STANDARD" if the surveyed item meets the GSA standards described in the column labeled "STANDARD."

Check "BELOW STANDARD" if the item surveyed does not meet the "STANDARD," but you believe reasonable accessibility is provided for disabled visitors. If you check "BELOW STANDARD," you must describe how reasonable accessibility is provided. Do this in the column labeled "COMMENTS."

Check "NOT ACCESSIBLE" if the item surveyed does not provide reasonable accessibility for disabled visitors.

Check "NOT APPLICABLE" if the question does not apply to any feature at the site.

4. Make notes in the column labeled "COMMENTS" for the following reasons:

There is a check in the column labeled "BELOW STANDARD"—explain accessibility.

A question applies to more than one item at a site—describe item and level of accessibility.

You can provide measurements and notes that will be of assistance in describing a condition at a later date.

STANDARD	ADDITIONAL TECHNICAL INFORMATION	Not Applicable / Not Accessible / Below Standard / Standard	COMMENTS
PARKING LOTS Historic Non-Historic			
WALKS Historic Non-Historic			
CURB RAMPS Historic Non-Historic			
RAMPS Historic Non-Historic			
ENTRANCES/EXITS Historic Non-Historic			
DOORS/DOORWAYS Historic Non-Historic			
STAIRS/STEPS Historic Non-Historic			
FLOORS Historic Non-Historic			
HAZARDS Historic Non-Historic			
PUBLIC TOILET ROOMS Historic Non-Historic			
WATER FOUNTAINS Historic Non-Historic			
PUBLIC TELEPHONES Historic Non-Historic			
ELEVATORS Historic Non-Historic			
CONTROLS Historic Non-Historic			
SIGNAGE Historic Non-Historic			
FIRE ALARM SIGNALS Historic Non-Historic			