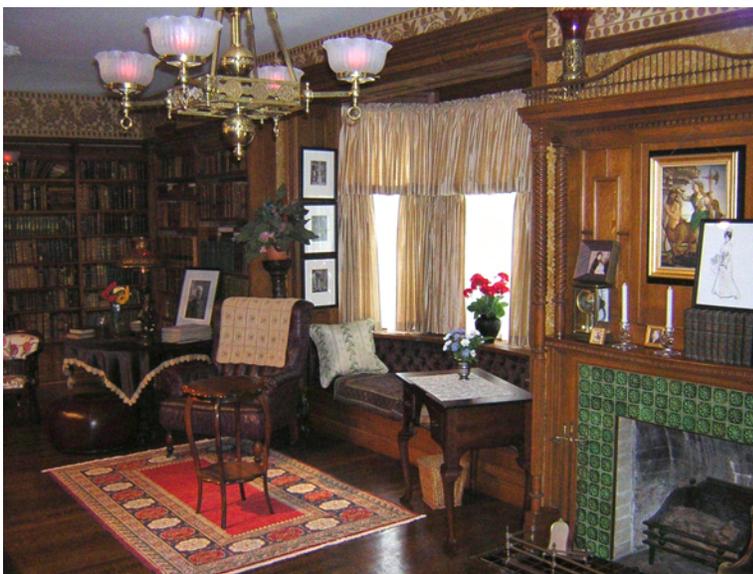




NPS Interpretive Media Inspection Guidance



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7500 IM

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Refer to the **NPS Interpretive Media Business Practices** document for additional information on interpretive media as it relates to FMSS.

7500 Interpretive Media (IM) Assets

In order to manage their IM assets, parks are required to identify and delineate them, including entering FMSS equipment/feature inventories. IM must be inspected and conditions documented to identify all deficiencies. Condition assessments will enable parks to update inventories, monitor changes in physical condition, and evaluate adverse impacts. The information gathered from these assessments will record the parks IM portfolio and articulate the condition of the IM assets, including identifying the deferred maintenance (DM) needs, capital improvement needs, and recurring maintenance needs. Complete and thorough condition assessment information stored in the FMSS provides an opportunity for interpretive media asset needs to be clearly defined by park management. With this information, accurate funding requests can be created for the repair, replacement, or creation of new IM assets.

This document outlines inspection guidance for IM assets, and for IM equipment associated with other asset types. The inspection guidelines are not intended to address standard operational needs nor daily inspections. Rather, the guidelines should be used to conduct annual inspections and comprehensive condition assessments to identify deferred maintenance or other deficiencies. Park staff must determine an annual maintenance schedule based on the IM environment and use. Activities addressed through routine maintenance operations are not included.

Understanding Comprehensive and Annual Condition Assessments

To successfully complete an IM inspection, park maintenance and interpretive staffs should work together in asset hierarchy development, inspection planning and deficiency identification. The park interpretive staff has the primary responsibility to insure that inspections are done thoroughly and accurately; the facility staff should ensure that the assets

and the features inspected are correctly identified in the park's asset hierarchy.

The comprehensive condition assessment is performed every three to five years and may include input from specialists who can look thoroughly at all the IM's components, including behind-the-scenes wiring, lighting system, etc. The initial condition inspection should be a comprehensive condition inspection. The annual condition inspection is typically completed by the park's staff, to monitor the condition and check for any new obvious and apparent deficiencies.

One of the primary goals of the inspection and condition assessment process is to capture the amount of work relating to the condition of IM. Deferred Maintenance work is work that was not completed when it was scheduled and includes Deferred Maintenance (DM), Recurring Maintenance Deferred Maintenance (RMDM), and Component Renewal Deferred Maintenance (CRDM). During a condition inspection, Corrective Maintenance (CM), Preventive Maintenance (PM), and Component Renewal (CR) should be identified so that an annual maintenance plan can be developed. The four types of Capital Improvement (CI) – Alterations, Energy Policy, Legislatively Mandated, and New Construction needs should also be identified.

Conducting Condition Assessments

Parks can obtain the 7500-IM condition assessment job plan from the asset management toolbox website on InsideNPS (<http://inside.nps.gov/waso>). This provides a list of all components that need to be inspected on an annual basis. Parks must conduct condition inspections systematically to facilitate accurate and consistent collection of data and ensure that all data needed to prepare Class C cost estimates (accuracy of -30 percent to +50 percent) for deficiency correction are collected. When conducting IM condition assessments, the park will need to identify the deficiency, prepare a cost estimate, and document which materials, labor, equipment, and expertise are needed to correct the deficiency.

At a minimum, the following should be recorded for each deficiency:

- The corrective action should be specified (for example, repair, replace, realign, adjust, remove, etc.).
- Identify the work type and sub work type of the deficiency.
- The deficiency should be defined (for example, cosmetic damage, graffiti, missing components, etc.).
- Location data should be provided (for example, in main lobby at the reception desk, etc.).
- Data should be quantified in sufficient detail to facilitate the preparation of Class C cost estimates and should include the necessary labor, equipment, and materials (for example, how many, how much, how long, etc.).
- Accessibility problems or safety hazards should be identified.
- Identify the WBS component and sub-component.

Conducting Condition Assessment of Equipment Associated with Other Asset Types

In many instances, IM will interface with other asset types – 2100-Trails, 3100-Maintained Landscapes, 4100-Buildings, 7100-Monuments/Memorials, 7300-Fortifications, etc. because the IM setting is part of the Spec Template and Inspection Guidance for those other asset types. When completing the IM inspections, park staff will have to work together to ensure the condition of the IM setting has been identified during the comprehensive and annual condition assessments of that asset or if it was missed as part of the IM inspections. Examples of IM settings are the boardwalk, the trail, the overlook retaining wall, the fort bastion, etc. to which a wayside exhibit is attached.

Two asset types, 4100 Buildings and 7900 Amphitheaters, have IM features – audiovisual equipment – that were not delineated at the time the comprehensive condition assessments were originally completed. Appendix A provides guidance for capturing data on AV equipment for these two asset types. Other asset types may also include audiovisual equipment. In those instances, this guidance should be used for those assets as well.

Conducting IM Condition Inspection Checks

The guidance provided in this document represents a minimum level of inspection that should be conducted and suggests what to look for when assessing the condition of an IM asset. The inspection checks for each IM component category are listed beginning on page 8 of this document.

We recommend that you print all relevant Media Inventory Database Systems (MIDS) reports before performing the condition inspection to retrieve content and condition information that may already exist. For example, during the inspection you may identify that a wayside base needs to be replaced; however, according to the MIDS report, the existing wayside panel has inaccurate media content and message — why install a brand new wayside base on a wayside panel that is no longer effective?

While conducting the IM condition assessments, digital photographs of the entire feature and specific deficiencies should be taken. The digital photographs can then be loaded onto NPSFocus and the FMSS Asset number and other metadata completed in NPSFocus. Later, when developing a PMIS project, the park can retrieve and link the photographs of the deficiencies they have uploaded to NPSFocus to the PMIS project.

Learn more about NPSFocus at:

http://165.83.198.10/pmis/help/help_npsfocus.cfm

IM Life-Cycle Estimates

Life-cycle estimates for IM components are important to managing assets and planning maintenance activities. The life-cycle estimates for IM assets assume that each component will experience normal wear and tear and that proper maintenance and repair is provided over the life cycle of the component. Parks should use the provided estimates as general guidance. They are listed in tables at the beginning of each component inspection section of this document.

Factors Reducing Life Expectancy

The expected life of an asset may vary due to site-specific conditions. The following table lists various conditions that can reduce the expected life of IM.

Site Impacts
High Level of direct sunlight/high level reflected sunlight
Harsh environments (air pollution, roadside salt)
Poor or inappropriate building conditions affecting interior exhibits
High visitation/use levels
Climatic Impacts
Temperature/light extremes/humidity/water damage
Precipitation/flooding
Wind/snow/lightning
Severe storms
Biological Impacts
Sap, mold, mildew
Rodents, birds, insects
Resource Mangement Impacts
Vandalism
Theft
Maintenance Impacts
Damage induced by maintenance or cleaning practices
Lack of preventive and/or routine maintenance
Management Impacts
Policy or design issues that result in recurrent impacts to IM

Assessing Accessibility

NPS programs, facilities, and services are required to be accessible in accordance with all law, policy, and regulations. Appendix D contains a checklist derived from the Servicewide Accessibility Condition Assessment Process. Parks should use this checklist when completing IM condition assessment inspections.

IM that are designated as accessible in the FMSS should be inspected for conformance to all applicable accessibility standards. If the accessibility solution exists but it is not up to standards or has not been maintained to standards, the deficiencies should be labeled “Legislatively Mandated Accessibility” (LMAC). If the accessibility standards for the IM assets or their components need to be addressed the deficiency should be identified as “Capital Improvement Legislatively Mandated” (CILM) deficiency. In both cases, cost estimates should be generated to remedy the deviation.

7500 Interpretive Media Component Inventory

The following list is a minimum level of inventory. In some cases, the park may decide to gather information at a higher level (for example, more components); however, the recommended components are listed below along with their applicable Uniformat II WBS number:

7500 Interpretive Media	
Number	Equipment Type
01	G9094 WAYSIDE — Wayside Panel
02	G9094 WAYSIDE — Wayside Base
03	G9094 EXHIBIT — Exhibit Structure
04	G9094 EXHIBIT — 2-Dimensional Exhibit Graphic
05	G9094 EXHIBIT — Exhibit Case
06	G9094 EXHIBIT — Exhibit Lighting System
07	G9094 EXHIBIT — Custom 3-Dimensional Exhibit Element
08	G9094 EXHIBIT — Exhibit Reproduction Historic Furnishing
09	G9094 EXHIBIT — Exhibit Audiovisual System

G9094 Interpretive Media: Wayside System

Wayside System

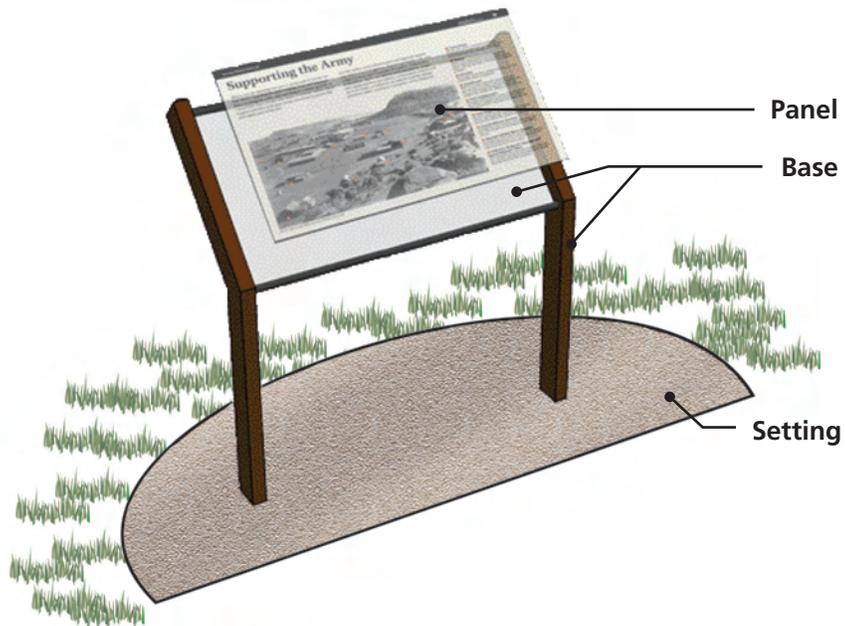
A group of waysides managed as a unit.



The Basic IM Components of a Wayside Exhibit are:

- Panel
- Base

Note: The wayside Setting is not an IM component, but should be inspected and inventoried under the appropriate asset, i.e. Trail, Road, Maintained Landscape, etc.



Component Inventory – Wayside System

G909401 Wayside Panel An exhibit element that’s primary purpose is to display interpretive content in an outdoor environment.

Life-Cycle Estimates:

G909401 – Wayside Panel			
Item	Years	Item	Years
Cast Aluminum	30	High Pressure Laminate	5
Cast Iron	30	Porcelain Enamel	30
Etched/Anodized Aluminum	20	Plastic Laminate	3
Fiberglass	5	Wood	25
Glass	20		

Preventive Maintenance Activities:

1. Cleaning the panel – yearly.
2. Waxing the panel – yearly.
3. Painting – inspect yearly, paint as needed (wood panel only, dependent on the environment).

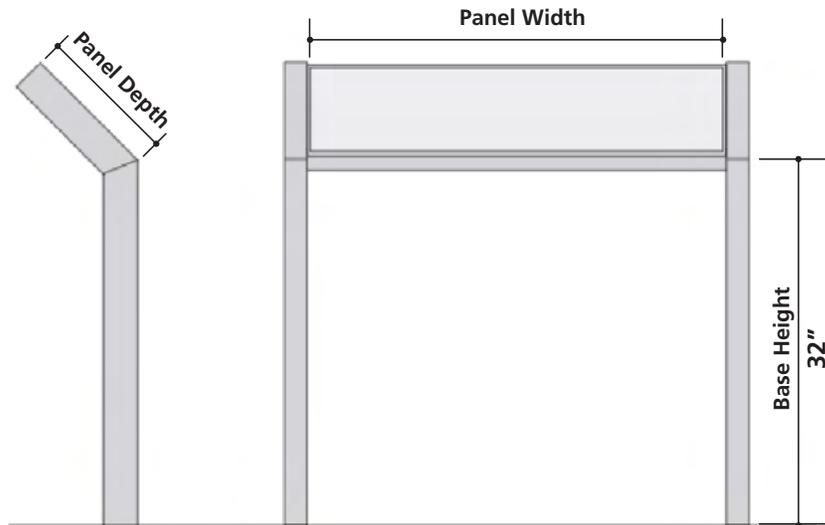
Check For:

1. Panel is dirty:
 - Panel should be maintained with cleaning materials
2. Panel material and condition:
 - Metal - scratched, pitted, dented, stained, corroded, rusted
 - Fiberglass - scratched, clouded, yellowed, faded, resin worn away
 - High Pressure Laminate - scratched, clouded, faded, chalky, warped
 - Porcelain enamel - scratched, pitted, chalky, dented, cracked, chipped
 - Glass - scratched, chipped, cracked, cloudy, smashed
 - Plastic Laminate - delaminated, scratched, clouded, faded, yellowed, warped, cracked
 - Wood - scratched, faded, discolored, rotted, parasite damage
 - Legibility - does panel damage affect legibility?
3. Panel has been vandalized by paint, marker, intentional gouging, smashing, bullets, fire, other
4. Meets visual accessibility standards

**G909401
Continued**

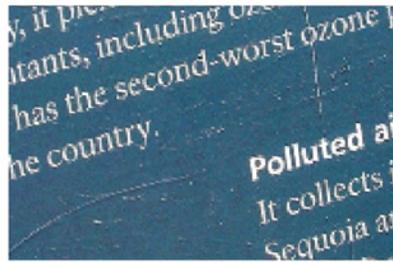
**Measuring for
Wayside Exhibits**

Wayside exhibits are measured by panel size. Panel sizes are based on rounded measurements such as 36" x 24" or 42" x 20". Actual measurements may vary. This diagram shows how to measure the depth and width of a panel as well as the height of the base.

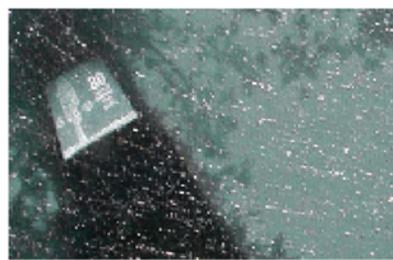


**When to Replace
a Fiberglass
Wayside Panel**

Fiberglass panels can last one year to indefinitely depending on their exposure to sunlight. These examples show typical damage.



Minor scratches and crazing. Fibers appearing at the surface can be repaired by waxing and buffing.



Major crazing requires panel replacement.



A panel should never be allowed to look like this in the field.

Component Inventory – Wayside System

G909402 Wayside Base Hardware supporting the wayside. Includes ancillaries: audio station, brochure holders, coin boxes, miscellaneous posting holders, and trail register boxes.

Life-Cycle Estimates:

G909402 – Wayside Base			
Item	Years	Item	Years
Aluminum	30	Stainless Steel	25
Galvanized Steel	30	Steel	30
Weathering Steel	30	Wood	30

Preventive Maintenance Activities:

1. Inspection – yearly.
2. Repaint, restrain, and reseal – as necessary.
3. Replace audio components – as necessary.

Check For:

1. Base material and condition:
 - Metal - scratched, peeling paint, areas of bare metal exposed, legs are bent, corroded, rusted, pitted, dented, broken
 - Wood - rotted, warped, scratched, discolored, parasite damage, broken
2. Base installation:
 - Correct location and position, correct compass orientation, correct height, level, plumb, square, sturdy, missing components
 - Does the existing base meet accessibility requirements?
 - Safety hazards - major or minor
3. Base has been vandalized by paint, marker, intentional gouging, smashing, bullets, fire, other
4. Audio station:
 - No hum, no excessive hiss, no audible distortion, balanced tonal quality, adequate volume
 - Control system (typically a pushbutton) - properly functioning
 - Connectors - frays, loose connectors, open jackets, or bare conductors

**G909402
Continued**

**Examples of
Wayside Exhibit
Bases and
Mounts**



**Low-Profile,
Single Post**



**Brochure
Dispenser**



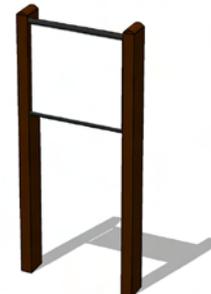
**Low-Profile,
T-Style Base**



Socket Mount



**Low-Profile
Cantilevered Base**



**Small Upright
Base**



Single-Upright Base



**Custom Rail
Mount Base**



Masonry Mount

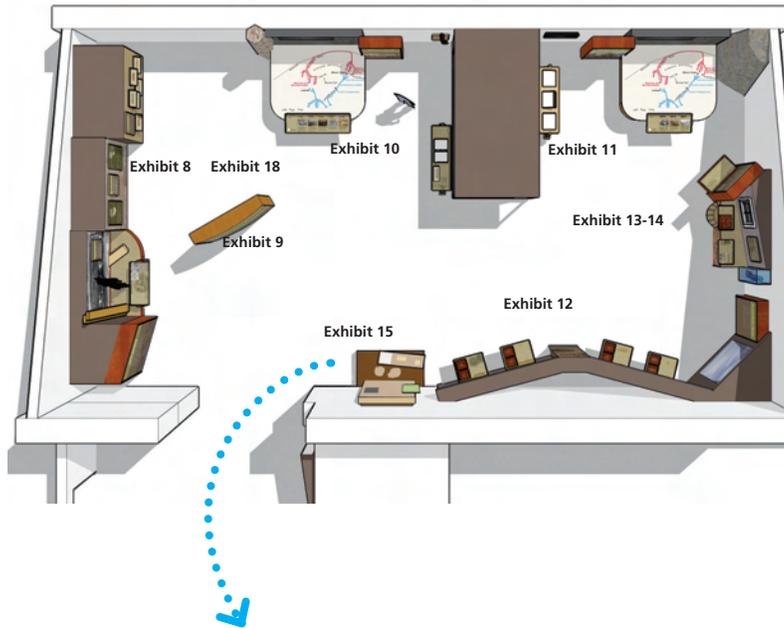


Wall Mount

G9094 Interpretive Media: Exhibit / Exhibition

Typical Exhibit Floor Plan

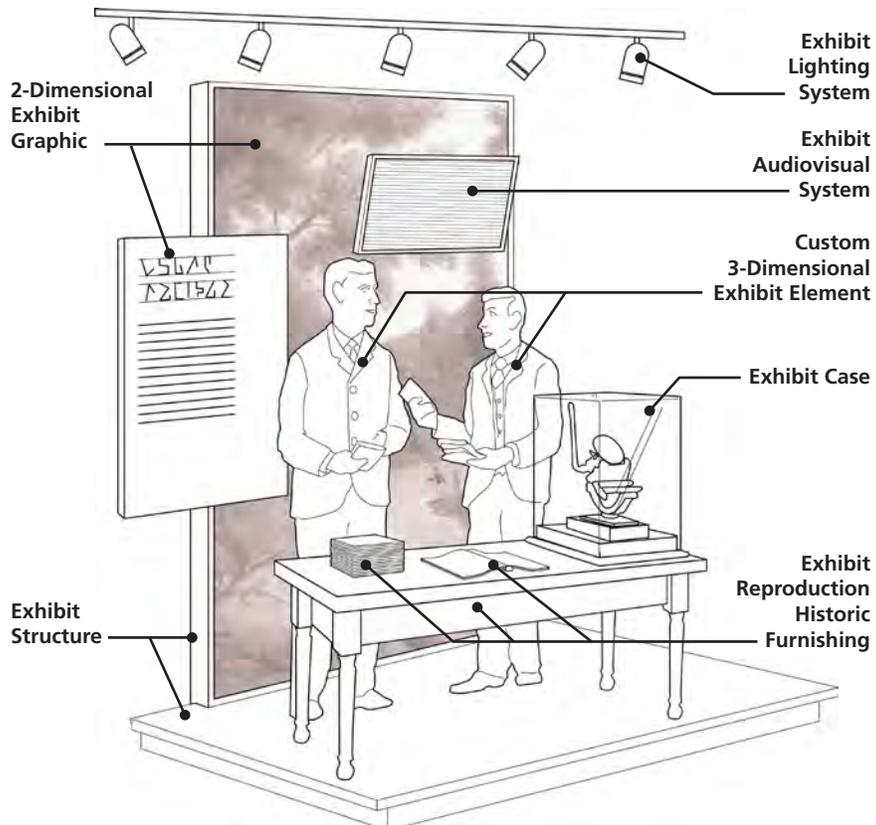
An IM exhibit / exhibition asset usually consists of several themed areas and numerous inter-related components.



The Basic IM Components of an Exhibit / Exhibition are:

- Exhibit Structure
- 2-Dimensional Exhibit Graphic
- Exhibit Case
- Exhibit Lighting System
- Custom 3-Dimensional Exhibit Element
- Exhibit Reproduction
- Historic Furnishing
- Exhibit Audiovisual System

Note: Not all component types will be found in every exhibit.



G909403 Exhibit Structure Support features built or purchased specifically for the exhibition. These elements primarily provide structural support and/or operational support for the interpretive elements in the exhibition.

Life-Cycle Estimates:

G909403 – Exhibit Structure			
Item	Years	Item	Years
Wood	20	Plastic / Composite	15
Metal	30		

Preventive Maintenance Activities:

1. Perform visual inspection weekly to identify safety issues.
2. Repair or replace – as necessary.

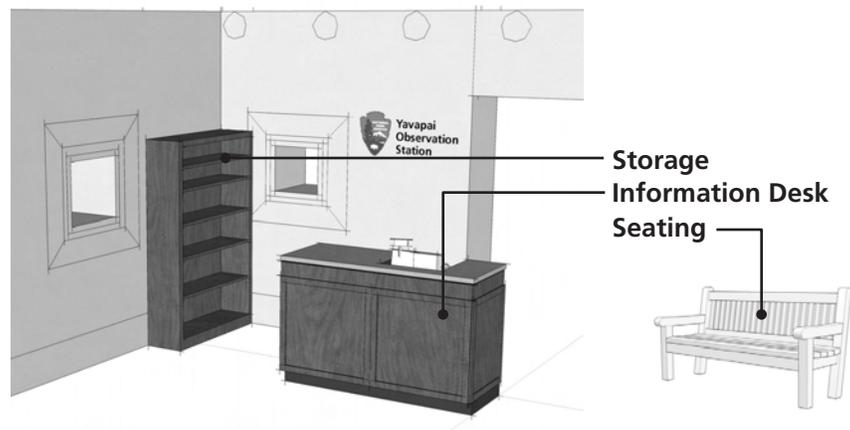
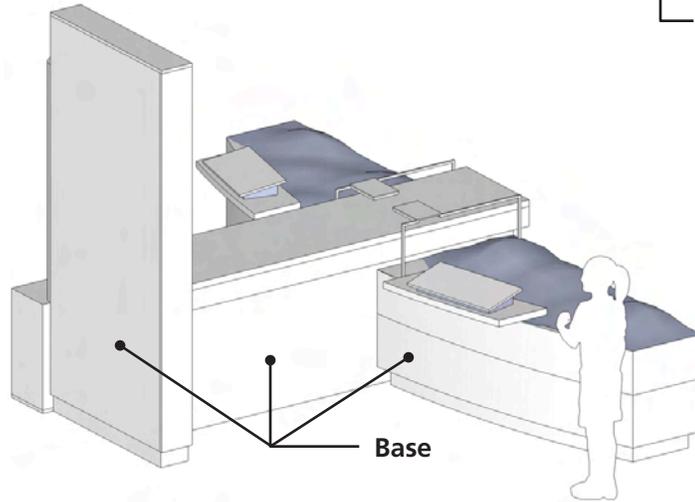
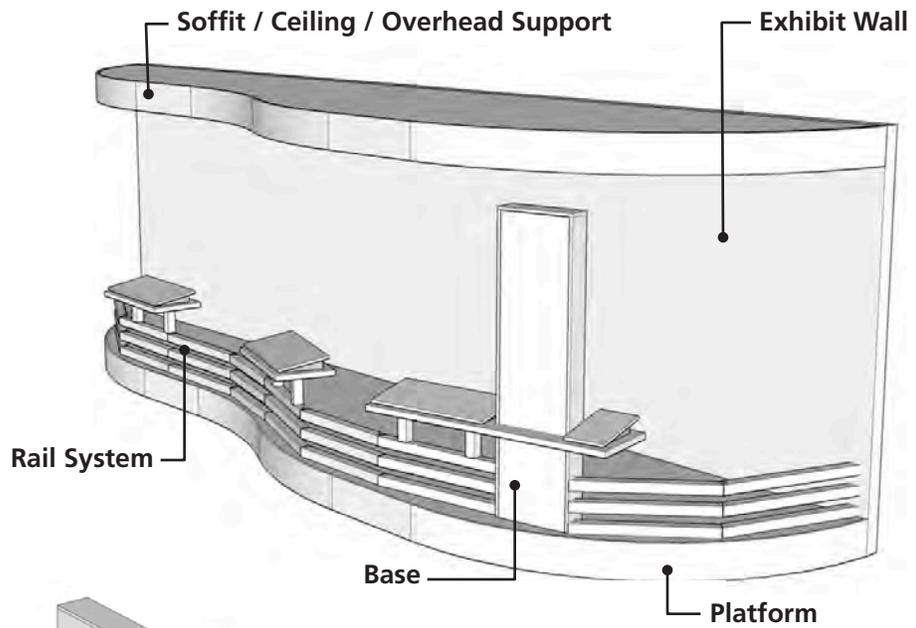
Check For:

1. Loose, not firmly attached
2. Scratched, dented, gouged, split, cracked, or warped
3. Damaged, broken, or missing pieces
4. Worn, damaged finish
5. Delaminated
6. Discoloration
7. Sharp edges or splinters
8. Structurally unsound
9. Out of level
10. Safety hazards
11. Graffiti or other vandalism

Component Inventory – Exhibit / Exhibition

G909403
Continued

Examples of
Exhibit Structure
Components



**G909403
Continued**

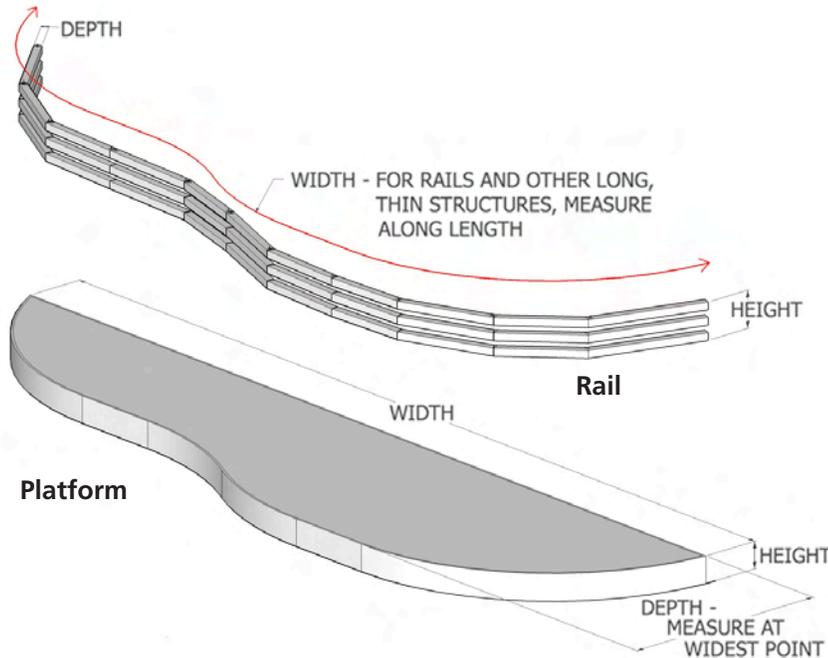
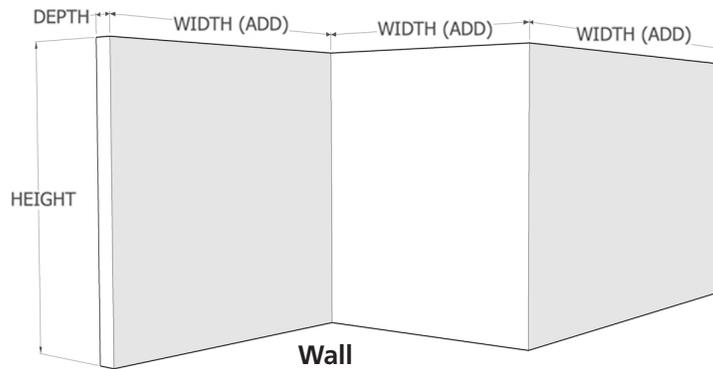
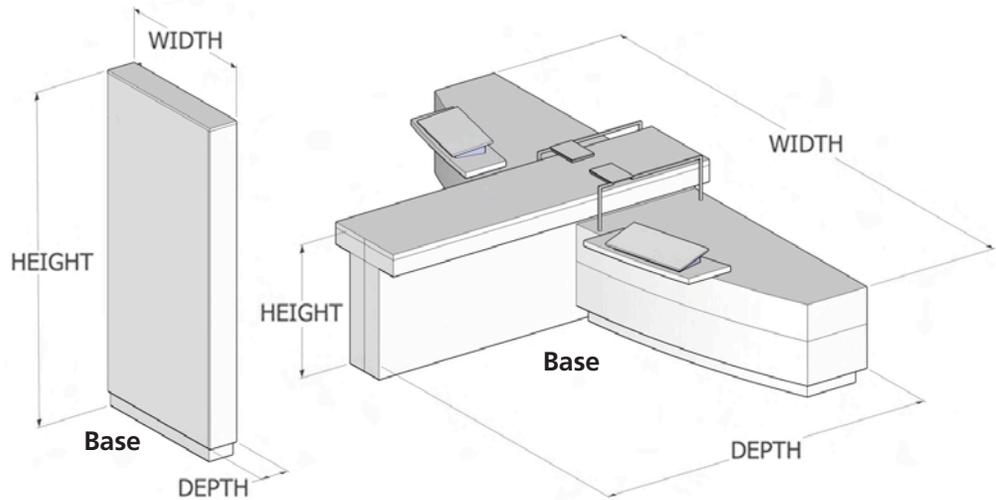
**How to Measure
an Exhibit
Structure**

When viewed from the front, width is the side to side dimension, height is the top to bottom dimension, and depth is the front to back dimension.

Approximate dimensions are acceptable for irregular, bulky shapes; in these cases measure width, depth, and height required to fit in a rectangular box.

For a long thin structure (such as a rail or wall), measure width along the horizontal dimension; if curved, follow the curve.

Note how in this example the width of the rail and width of the platform that it sets on are measured differently.



**G909404
2-Dimensional
Exhibit Graphic**

An exhibit element whose primary purpose is to display a 2-dimensional graphic image. Includes the image on its substrate, and any mounting material to which it is permanently attached. Usually requires replacement as a unit; compound graphic elements such as flip books may have individually replaceable sub-elements.

**Life-Cycle
Estimates:**

G909404 – 2-Dimensional Exhibit Graphic			
Item	Years	Item	Years
Inkjet / Photo	10	Carved / Etched	20
High Pressure Laminate	10	Hand Painted	15
Cut / Routed	10	Vinyl	7
Silkscreen	5		

**Preventive
Maintenance
Activities:**

1. Inspect graphics periodically for fading or color shift. This may occur before any other physical degradation is seen.

Check For:

1. Graphic elements are missing
2. Graphic elements are not firmly attached, or have fallen from their mounting location
3. Surface / substrate:
 - Fading, clouding, streaking, spotting, or discoloration of the image
 - Graffiti or other vandalism
 - Scratches, dents, tears, and gouges in the image surface
 - Bubbles in, or delamination of clear overlamine material
 - Delamination of the substrate from its backing material
 - Sharp, pointy, unsafe pieces
4. Panel backing material:
 - Cosmetic and structural damage to backing panels
 - Loose mounting hardware
5. Compound graphic elements:
 - Missing and damaged parts
6. Images / substrates applied directly to exhibit or building structure (for examples – ink, paint, vinyl lettering, or wallpaper):
 - Missing pieces
 - Peeling, bubbling, cracking, tearing, or delaminating
 - Marring / discoloration of the underlying structure after removal of image or substrate

**G909404
Continued**

**Examples of
2-Dimensional
Exhibit Graphics**

There are endless variations in size, shape and construction of exhibit graphics, but most can be categorized based on the samples shown here.

1. Standard graphic panel. Most common, usually consists of a single photo or inkjet print mounted onto a rigid backing panel.

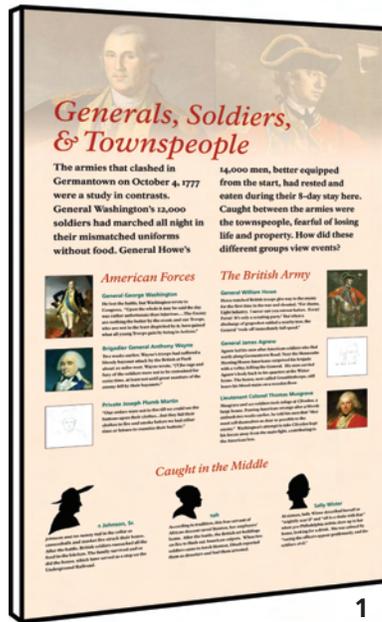
2. Cut-out graphic. Panel is cut to follow a complex shape. Often constructed of high pressure laminate.

3. Compound graphic panel. Consists of several smaller graphic elements individually mounted onto one panel; individual elements may be replaceable.

4. Flip book. Compound graphic element consisting of several “pages” which may be individually replaceable.

5. Applied graphic. Image is painted, silk screened, adhesive vinyl, etc. applied directly to building or exhibit structure.

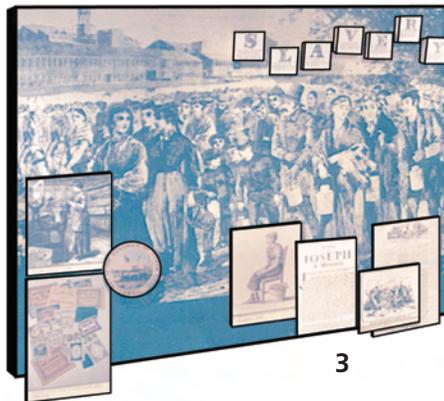
6. Banner. Image on fabric or other flexible material; includes pole pockets or grommets for attachment.



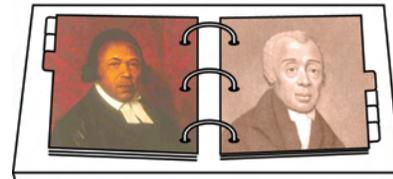
1



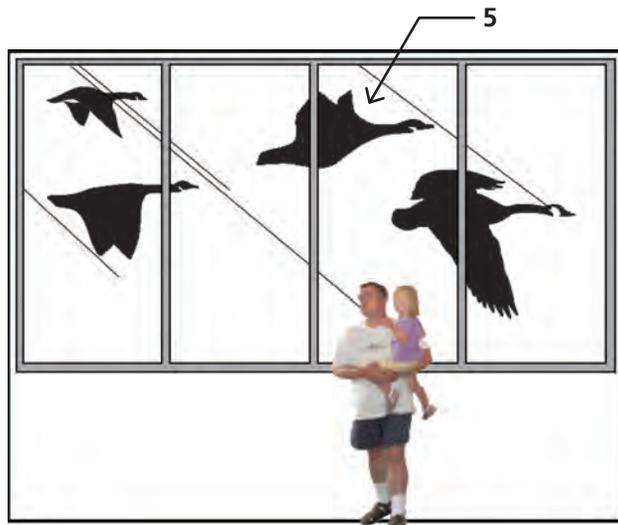
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3



4



5

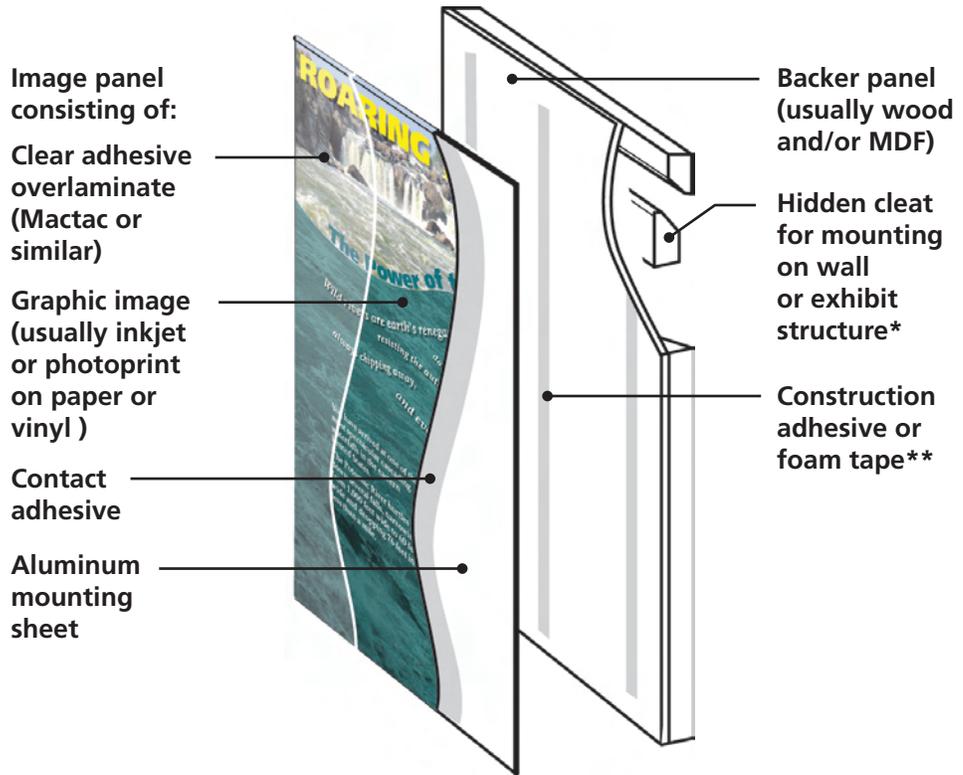


6

**G909404
Continued**

**Graphic Panel
Construction
and Mounting
Methods**

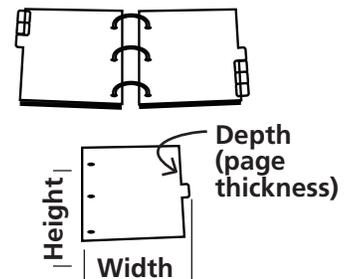
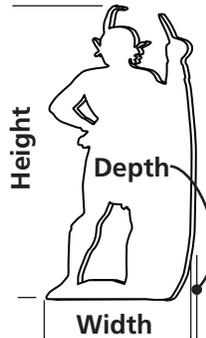
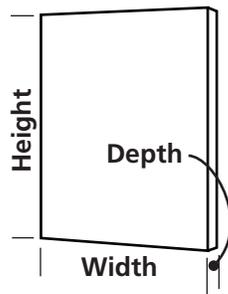
Graphic panels often consist of layers of material that are permanently bonded together. Damaged panels usually cannot be repaired, they must be replaced as a unit. Sometimes the backer panel can be reused. The illustration shows one typical construction method.



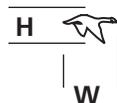
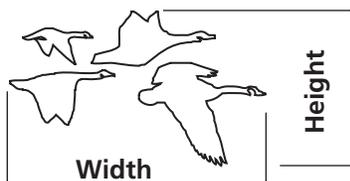
* In some cases, screw access holes may be located on the side, top, or bottom of a backer panel.

** A thin length of wire may be used to cut through foam tape to separate an image panel from the backer panel.

**How to Measure
Exhibit Graphics**



Flip books - Measure individual page, indicate number of pages.



Applied graphics (graphics directly applied to building or exhibit structure) - Measure closely grouped graphics as a unit. Measure widely dispersed graphics individually. Depth = 0 or minimal.

**G909405
Exhibit Case**

The primary function of an exhibit case is to hold and display objects that require protection from the surrounding exhibit environment. Cases are often highly customized to meet curatorial requirements for control of light levels, humidity, and security. Visually pleasing display of objects, and integration with other exhibit elements are also important factors in case design. Includes Exhibit Case Base, Vitrine, Internal Lighting System, and Ancillary Case Equipment.

**Life-Cycle
Estimates:**

G909405 – Exhibit Case			
Item	Years	Item	Years
Acrylic / Non-glare acrylic	10	Steel	30
Aluminum	20	Timber	20
Concrete	35	Wood	20
Fiberglass	15	Glass / Non-glare glass	15
High Pressure Laminate	10	Special security Glass	20
Masonry / Stone	30	Fiber Optic Lighting	10
Metal	20	LED Lighting	7
Painted Finish	7	Incandescent Lighting	15
Plastic	10	Fluorescent Lighting	15

**Preventive
Maintenance
Activities:**

1. Artifacts within cases should be monitored for degradation.

**Exhibit Case
Base:**

The base is the primary structure that provides a means of support for the display objects and the vitrine.

Check For:

1. Loose, damaged, missing, cracked, chipped, warped, bending, tearing, delaminating, scratches, dents, abrasions, gouges, bubbles, stains, gaps, scuff marks, small chips, wood splinters, dings, protruding fasteners, worn finish / paint loss, etc.
2. Structural soundness
3. Graffiti or other vandalism
4. Components missing / damaged / broken

G909405 Continued

Vitrine: A transparent window or enclosure through which objects in an exhibit case are viewed.

- Check For:**
1. Transparent acrylic material:
 - Warped, bending, crackled, broken, scratched, cloudiness, crazing, or seams separating
 2. Transparent glass material:
 - Scratched, shattered, cracked, or broken
 3. Security Hardware:
 - Hardware or special access tools missing

Internal Lighting System: Lighting built into a case, usually consisting of fiber optics, LED, incandescent, etc. (Does not include exhibit lighting systems indentified in G909406.)

- Check For:**
1. Lighting System:
 - Lamp burned out, missing lamps, lamps are incorrectly substituted, use of inappropriate wattage, or aimed inaccurately
 2. Transformer:
 - Inoperative
 - Noisy
 - Overheating
 3. Wiring:
 - Exposed conductors
 - Poor connections

Ancillary Case Equipment: Components that support objects in the case, or enhance case security and environment.

- Check For:**
1. Sensors:
 - Burned out, missing, or not programmed correctly
 2. Passive Buffering System:
 - Faulty, missing, dried out, or saturated desiccant
 3. Gaskets / Seals:
 - Missing or damaged
 3. Artifact Mounts:
 - Missing, damaged, creasing, folding, deformed, inadequate support, improperly designed or constructed, improperly secured, or orientation inappropriate

**G909406
Exhibit
Lighting
System**

System components used for general exhibit lighting. Often mounted on the exhibit area ceiling or on top of exhibit structures. Includes Exhibit Lighting Equipment and Accessories. (Does not include specialized systems closely integrated with exhibit cases, custom exhibit elements, and AV presentations.)

**Life-Cycle
Estimates:**

G909406 – Exhibit Lighting System			
Item	Years	Item	Years
Permanently Mounted Fixture	15	Standard and Compact Fluorescent Lamp	6
Track Mounted Fixture	15	LED Fixture & Lamp	7
Portable Fixture	15	External Transformer	10
Fiber Optic Illuminator	15	Dimmer	10
Halogen Lamp	1	Motion Sensor	10
Standard Incandescent Lamp	1	Color Filter	7
Metal Halide Lamp	3	Fixture Accessories	15

**Preventive
Maintenance
Activities:**

1. Inspect exhibit weekly for lamp failure. Replace with the originally specified lamp type as necessary.

**Exhibit Lighting
Equipment:**

Components required for basic operation of the exhibit lighting system.

Check For:

1. Electrical Faults:
 - Faulty or tripping circuit breakers
2. Fixtures / track:
 - Loose, damaged, missing, or inaccessible components
3. Lamps:
 - Burned out, missing, incorrectly substituted, wrong wattage, wrong beam spread, improperly aimed
4. Fiber Optic Illuminators:
 - Loose, damaged, missing, or improperly ventilated
5. Controller / Dimmer:
 - Not Programmed correctly, inoperative
6. Transformer:
 - Inoperative, noisy, or overheating
7. Motion Sensors:
 - Improperly aimed, broken, or inconsistent triggering

**G909406
Continued**

**Exhibit Lighting
Accessories:**

Optional accessories, usually attached to a lighting fixture, that direct, focus, or change the color or character of illumination.

Check For:

1. Filters, Screens, Gobos:
 - Missing, damaged, or faded color
2. Barn Doors, Framing Projectors, Screens:
 - Missing, damaged, or improperly adjusted

**G909407
Custom
3-Dimensional
Exhibit
Element**

Typically, 3-dimensional objects and assemblies within the exhibition that are informational, interpretive, or artistic in nature. They may be purchased or custom fabricated by artists, sculptors, or technical specialist. (Does not include artifacts or other accessioned objects.) Includes Fabricated Components, Internal Lighting Systems, and Ancillary Parts and Equipment.

**Life-Cycle
Estimates:**

G909407 – Custom 3-Dimensional Exhibit Element			
Item	Years	Item	Years
Acrylic / Plastic Components	10	Treated Organic Material	10
Fluorescent Lighting	5	Carved, Coated Foam	10
Moving Mechanical Parts	7	Wood Components	20
Fiberglass Components	15	Glass Components	15
Fabric	7	Electrical Components	10
Stone / Aggregate	30	Fiber Optic Components	15
Metal	20	LED Components	7
Painted Finish	7	Incandescent Lighting	15

**Preventive
Maintenance
Activities:**

1. Inspect fabricated elements for damage or inoperable components.
2. Inspect taxidermy regularly for insect infestation.
3. Inspect internal lighting systems weekly for lamp or other system failures.

**Fabricated
Components:**

The core object or assemblies making up the custom 3-dimensional exhibit element.

Check For:

1. Loose or missing elements
2. Broken, inoperable parts
3. Faded or worn finish
4. Cracked, chipped, brittle, or crumbling materials
5. Abrasion or surface imperfections
6. Bug infestation
7. Safety hazard
8. Graffiti or other vandalism

G909407

Continued

Internal Lighting System:

Lighting components integrated into the custom 3-dimensional exhibit element. Typically includes internal illumination, special effects lighting, programmed fiber optic or LED systems. (Does not include exhibit lighting systems identified in G909406.)

Check For:

1. Lamps, Illuminators:
 - Burned out
 - Missing
 - Incorrectly substituted
 - Inappropriate wattage
 - Aimed Inaccurately
2. Control Systems:
 - Inoperative
 - Programming errors
3. Electrical Wiring:
 - Exposed conductors
 - Poor connections
4. Transformers:
 - Inoperative, noisy, or overheating

Ancillary Parts and Equipment:

Individually replaceable components required to make the element function as designed. Typically include electro-mechanical equipment, mechanical / moving parts, or hands-on elements subject to heavy visitor use.

Check For:

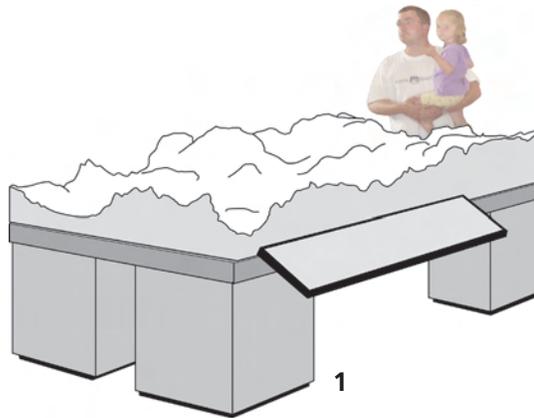
1. Electro/mechanical equipment:
 - Inoperative
 - Safety hazard
2. Mechanical / moving parts:
 - Broken, inoperable
 - Safety hazard
 - Binding
 - Requires lubrication
3. Hands-on, interactive components:
 - Inoperative
 - Missing
 - Safety hazard
 - Worn finish

G909407
Continued

**Examples
of Custom
3-Dimensional
Exhibit Elements**

These elements are usually created by artists, sculptors, model makers, or other highly trained specialists. Minor maintenance may be performed by park staff, but major repairs require special skills. Check exhibit maintenance manual if available.

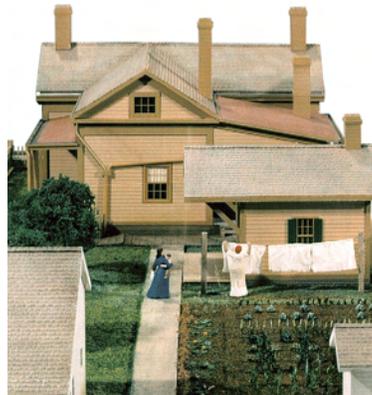
1. Topographic map. Some maps include custom lighting and electronics for animated effects.
2. Life size figure. This example is touchable. Protected figures may be more fragile and have fabric clothing.
3. Scale model. This example is highly detailed and fragile, requiring protection. Touchable models usually have less detail.
4. Interactive device. Custom manipulative elements require regular maintenance to repair or replace quickly wearing parts.
5. Diorama. Complex natural and cultural history scenes in exhibits may be easily damaged by improper cleaning or maintenance.



1



2



3



4



5

G909408
Reproduction
Historic
Furnishing

Reproduction of an object from the time period depicted in an historic furnishing exhibit. Also includes reproduction interior design elements reflecting a specific historical era and location. Includes Room Treatment and Reproduction Objects. (Does not include permanent architectural features, artifacts, or accessioned objects.)

Life-Cycle Estimates:

G909408 – Exhibit Reproduction Historic Furnishing			
Item	Years	Item	Years
Paper	10	Fabric	10
Wood	5	Glass / Ceramic	10
Metal	7	Plastic	20

Preventive Maintenance Activities:

1. Inspect regularly for fading, wear, and broken parts.

Room Treatments:

Includes reproduction wall / ceiling papers, floor coverings, window treatments, barriers, and fixtures (including period plumbing and other building hardware that are installed as part of a historic furnishing).

Check For:

1. Wall / ceiling papers:
 - Fading, peeling, staining or water damage (especially ceilings), abrasion, dirt, brittleness, mold, or mildew
2. Floor coverings:
 - Fading, wear, staining, dirt, insect infestation, mold, or mildew
3. Window treatments:
 - Fading, staining, dirt, tearing, embroidery coming apart, seams coming apart, silk material breaking down structural, or broken or missing hardware
3. Fixtures:
 - Rusted / corroded metal, missing or broken glass, missing or degraded fabric shades, etc.
3. Barriers:
 - Missing, damaged
 - Need for alteration due to change in associated exhibit
 - Accessibility issues

G909408 Continued

Reproduction Objects: Typically includes reproduction furniture, clothing, personal and household objects, industrial items, and military related objects from a specific historical period and location. (Do not include original artifacts or any objects accessioned into the park collection.)

- Check For:**
1. Papers:
 - Fading, brittleness / acidity, tearing, staining, mold, or mildew
 - Worn, torn, or degraded book binding
 - Infestation in books
 2. Wood:
 - Wear, scratches, dents, cracks, breaks, missing elements or hardware, loose furniture joints / other loss of structural integrity, or insect infestation
 3. Metal:
 - Rust / corrosion, dents or bends, or missing or broken elements
 4. Fabrics:
 - Fading, staining, dirt, tearing, seams, embroidery, etc.
 5. Glass / Ceramic:
 - Breaks, cracks, chips, worn or missing glaze
 6. Plastic:
 - Fading, breaks, cracks, chemical degradation of the material itself to become brittle, flaky, soft, etc.
 7. Other:
 - Degraded leather or fur, broken plaster or gesso ornamentation, missing gilding, broken out cane / rush / splint chair seats, etc.
 - Possible insect infestation in organic materials

**G909409
Exhibit
Audiovisual
System**

A combination of electrical, electronic, and ancillary equipment that supports one or more audio, video, slide, film, and/or multimedia presentations within an IM exhibit asset. Includes Media Players, Video / Data Monitors, Video / Data Projectors, Slide Projectors, Motion Picture Film Projectors, Projection Screens, Audio Equipment, AV Control Systems, Programmed Lighting Systems, Accessibility Equipment, and Ancillary Equipment.

**Life-Cycle
Estimates:**

G909409 – Exhibit Audiovisual System			
Media Players			
Item	Years	Item	Years
DVD Player	5	HD Player/Media Server	3
CD Player	5	Solid-State Player (Flash Drive)	5
Videocassette Player/Recorder (VCR)	5	Portable/Handheld Device	5
Laserdisc Player	5		
Video / Data Monitors			
Item	Years	Item	Years
Video/Data Monitor, Cathode Ray Tube (CRT)	10	Video/Data Monitor, Plasma	10
Video/Data Monitor, Liquid Crystal Display (LCD)	10	Video/Data Monitor, Touch Screen	10
Video / Data / Slide / Motion Picture Film Projectors			
Item	Years	Item	Years
Video/Data Projector, Cathode Ray Tube (CRT)	10	Slide Projector, Medium Format, Hasselblad	3
Video/Data Projector, Liquid Crystal Display (LCD)	5	Motion Picture Film Projector, 16mm	5
Video/Data Projector, Digital Light Processing (DLP)	5	Motion Picture Film Projector, 35mm	5
Slide Projector, 35mm, Kodak Carousel	2		

Component Inventory – Exhibit / Exhibition

G909409 Continued

Life-Cycle Estimates Continued:

G909409 – Exhibit Audiovisual System			
Projection Screens			
Item	Years	Item	Years
Projection Screen, Fixed/ Wall-Mounted, Front Projection	7	Projection Screen, Retractable, Electric/ Motorized Roll Down	7
Projection Screen, Fixed/ Wall-Mounted, Rear Projection	10	Projection Screen, Portable	7
Projection Screen, Retractable, Manual Roll Down	7		
AV Control Systems			
Item	Years	Item	Years
Pushbutton	8	Complex Microprocessor Based Controller, Crestron	6
Simple Microprocessor- Based Controller (i.e. Techno vision PC2)	5	Relay Logic Controller (i.e. Potter & Brumfield or Omron)	8
Complex Microprocessor- Based Controller, AMX	8	Programmable Logic Controller (i.e. General Electric or Farnum)	10
Audio Equipment			
Item	Years	Item	Years
Audio Amplifier	10	Audio Handset	7
Loudspeaker	7	Audio Wand	7
Audio Headphone	7		
Programmed Lighting Systems			
Item	Years	Item	Years
Lighting Dimmers	10	Light Emitting Diode (LED)	7
Fixtures	15	Ancillary Equipment	15
Lamps	1		
Accessibility Equipment			
Caption Board	15	Audio Transcription Transmitter	7
Caption Decoder	15	Assistive Listening Transmitter	7
Audio Transcription Transmitter	7	Assistive Listening Receiver	7

**G909409
Continued**

**Life-Cycle
Estimates
Continued:**

G909409 – Exhibit Audiovisual System			
Ancillary Equipment			
Item	Years	Item	Years
Equipment Racks	20	Surge Protectors	10
Cables	20	Uninterruptible Power Supply (UPS)	10
Connectors	20	Battery, Uninterruptible Power Supply (UPS)	4

Media Players: Includes DVD Player, CD Player, Laserdisc Player, Videocassette Player/Recorder, HD Player/Media Server, Solid State Player/Flash Drive, Portable/Handheld Devices.

- Preventive Maintenance Activities:**
1. Inspect players monthly for proper tape/disc load and error-free playback.
 2. For videocassette player/recorders, clean heads with a professional head cleaning cartridge at least once annually, or whenever head clogging occurs (as evidenced by on-screen “snow” or static during playback).

- Check For:**
1. Plays on demand, either by remote control or on-board controls
 2. No grinding, clicking, squealing / whining, or other unusual mechanical noise
 3. No visible dirt, dust, debris, fluid stains
 4. For DVD, CD, and Laserdisc players: Discs load and eject properly, programs play back without skipping
 5. For VCRs: Tapes load and eject properly with no sticking or hanging; programs play back without visual / audible dropouts, tracking errors, or image skewing

G909409 Continued

Video / Data Monitors:

Includes CRT, LCD and plasma monitors.

Preventive Maintenance Activities:

1. Clean monitor screens at least monthly according to manufacturer's instructions. Note that LCD and plasma screens are very sensitive and are easily scratched and damaged. Always turn monitors off before cleaning.
2. Inspect monitors monthly for color accuracy, sharpness, brightness, and evidence of image "burn-in."

Check For:

1. Image is clear, with no static, noise (snow), blurring, horizontal, vertical, or slanted lines or other anomalies
2. Colors are accurate, with no color shift, no colors brighter than others, no flaring of any one or two colors
3. Image is sufficiently bright for the surroundings
4. No evidence of image "burn-in" (for example, faint permanent images that appear on-screen, even when monitor is powered off)

Projectors:

Includes video, data, slide, and motion picture film projectors.

Preventive Maintenance Activities:

1. Inspect projectors weekly for lamp failure. Replace with the originally specified lamp type as necessary.
2. Inspect projectors periodically for proper focus, zoom and screen alignment, adequate brightness, accurate color reproduction, and proper ventilation.

Check Video / Data Projectors (CRT, LCD, DLP) For:

1. No warning indicators illuminated
2. Image should be bright enough to overpower (on screen) any light wash from ambient light sources
3. Image should be in focus across the entire screen
4. Image should fill the projection screen unless image format does not match screen format (for example, a 16:9 widescreen video projected onto a 4:3 standard screen)
5. Colors are accurate, with no color shift, no colors brighter than others, no flaring of any one or two colors
6. For CRT projectors: No red, green, or blue "ghosting" or artifacts on edges

G909409 Continued

Check Slide Projectors For:

1. Clean, with little or no dust
2. Proper lamp is installed
3. Inner and adjacent air flow is not obstructed
4. No dust, cracks or chips on lens
5. Lens is correct size and zoom to fill the screen
6. Lens is properly focused
7. No dust, dirt, cracks, or chips on slide trays
8. Moving parts on slide trays move freely

Check Motion Picture Film Projectors For:

1. Clean, with little or no dust
2. Proper lamp is installed
3. Inner and adjacent air flow is not obstructed
4. Drive belts are secure, not frayed
5. All moving parts are secure and operate freely
6. No dust, cracks or chips on lens
7. Lens is correct size and zoom to fill the screen
8. Lens is properly focused
9. Film sprocket holes are square, not torn or stretched
10. Film is not scratched or scarred
11. Film reels are not cracked or broken

Projection Screens:

Includes portable, fixed, front projection, rear projection, manual and motorized roll-down.

Check For:

1. Screen surface is clean, with no smudges, marks, creases, stains, tears, rips, waves, or looseness
2. For wall-mounted screens: Screen frame has no dents, bends or missing paint, and is securely fastened to mounting surface
3. For retractable screens: Screen deploys and returns smoothly, with no lagging or extraneous noises
4. For electric / motorized screens: Chassis is securely fastened to mounting surface; screen deploys and returns smoothly with no lagging or extraneous noises

G909409 Continued

Audio Equipment:

Includes amplifiers, loudspeakers, headphones, handsets, and audio wands.

Preventive Maintenance Activities:

1. Clean headphone pads at least weekly. If disposable foam pads are used, replace pads at least weekly.
2. Clean/disinfect handsets and audio wands with alcohol pads or bleach solution at least weekly, or more often if heavily used.
3. Check volume controls periodically to ensure proper audio level. Volume checks should be conducted when visitors are present and ambient noise levels are typical for the site.

Check For:

1. No hum, no excessive hiss, no audible distortion
2. Amplifiers are adequately ventilated, with no overheating
3. Balanced tonal quality, with adequate volume
4. No warning indicators illuminated
5. For Loudspeakers: Cabinets or enclosures are tight with no rattles, grill covers are in place, wiring is secured, no “buzzing” or distortion, sound has a balanced tonal quality and ample loudness, speakers are properly aimed at audience
6. For Headphones, Handsets, and Audio Wands: No loose or missing parts, no sharp or pointed edges, no damaged cables or connections, no distortion or buzzing, volume controls perform properly, audio level is correct

Control Systems:

Includes microprocessors, push buttons, relays, sensors

Preventive Maintenance Activities:

1. Clean pushbuttons periodically with a soft cloth dampened with a mild bleach solution. Do not allow fluids to drip into the pushbutton cavity.

Check For:

1. All functions perform properly without fail every time they are used
2. Pushbuttons operate smoothly and with little effort, lights illuminate when operated
3. Relays do not “chatter” or overheat

G909409 Continued

Programmed Lighting Equipment:

Includes fixtures, dimmers, lamps, and controllers

Preventive Maintenance Activities:

1. Inspect weekly for lamp or other system failures. Replace with the originally specified lamp type as necessary.

Check For:

1. Dimmers: Inoperative, noisy, or overheating
2. Fixtures: Loose, damaged, missing, or not accessible
3. Lamps and Light Emitting Diodes (LEDs): Burned out, missing, incorrectly substituted, use of inappropriate wattage, or aimed or beam spreads inaccurate
4. Ancillary Equipment:
 - Controls: Missing, damaged, or not accessible
 - Controllers: Not programmed correctly, lights improperly synchronized
 - Electrical: Faulty or tripping circuit breakers
 - Transformer: Inoperative, noisy, or overheating

Accessibility Equipment:

Includes caption boards, caption decoders, audio description transmitters / receivers, assistive listening transmitters / receivers

Preventive Maintenance Activities:

1. For caption boards and on-screen captions: Inspect daily to ensure that captions are turned on and properly synchronized.
2. For audio description and assistive listening receivers: Inspect periodically to ensure that batteries are fully charged, units are tuned to proper channel (if tunable), and program audio can be heard.
3. For audio description and assistive listening receivers: Clean ear pads after each use, or replace after each use if disposable pads are used.

Check For:

1. For caption boards and decoders: Power is ON, surface is clean, air flow is unobstructed, unit is securely fastened to mounting surface, text is accurate, text display is properly synchronized with audio soundtrack, text is legible, text is properly illuminated (not too bright or dim) for surroundings
2. For audio description and assistive listening transmitters: Unit is located away from large metal objects, antenna is positioned near vertical, unit is tuned to proper channel (if tunable)
3. For audio description and assistive listening receivers and headsets: Batteries are charged, no battery corrosion, unit is tuned to proper channel (if tunable), unit is clean, no loose or missing parts, no sharp or pointed edges, no damaged cables or connections, no distortion or buzzing, volume controls perform properly

**G909409
Continued**

**Ancillary
Equipment:**

Includes racks, cables, connectors, surge protectors, etc.

Check For:

1. For surge protectors and uninterruptible power supplies: No warning indicators illuminated
2. For cabling and connectors: No frays, loose connectors, open jackets, or bare conductors
3. For equipment racks: Lockable doors locked, air vents unobstructed, nothing stored on top, blank panels and covers in place, no sharp edges

Audiovisual (AV) Systems as Features of Non-IM Assets

Asset types other than Interpretive Media often include audiovisual presentation systems as a feature. The two most common examples are the Building (4100) asset and the Amphitheater (7900) asset:

- **An auditorium or theater AV System should be recorded against the appropriate building (4100) asset.**
- **An amphitheater AV System should be recorded against the appropriate amphitheater (7900) asset.**

Similarly, if other asset types have AV presentation systems associated with them the same guidance should be used, i.e. an AV presentation system on a large boat should be recorded against that asset.

We recommend using the **G909409 Exhibit Audiovisual System** inspection guidance in this IM Inspection Guidance document when capturing data for AV presentation systems associated with non-IM assets, since inspection guidance for other asset types generally does not include detailed guidance for this equipment.

This applies only to AV systems designed for presentation purposes. Any corresponding electrical system, communication system, etc. identified with the building, amphitheater, or other non-IM asset should be captured according to that system's inspection guidance and spec templates.

AV Systems should be included in the building, amphitheater, or other non-IM asset hierarchy in a manner similar to other equipment systems.

Appendix B

Interpretive Media Condition Assessment Deficiency Worksheet

WBS	IM Type	Quantity	UM	Deficiency	Priority	Comments
G909401	Wayside Panel					
G909402	Wayside Base					
G909403	Exhibit Structure					
G909404	2-Dimensional Exhibit Graphic					
G909405	Exhibit Case					
G909406	Exhibit Lighting System					
G909407	Custom 3-Dimensional Exhibit Element					
G909408	Exhibit Reproduction Historic Furnishing					
G909409	Exhibit Audiovisual System					

Quantity = How much of the asset/equipment needs corrective actions

UM = Unit of measure of how much needs correction (Be sure to gather all measurements during inspection)

Deficiency = Describe in detail what is wrong and what needs to take place to correct the problem

Priority = [M=Minor] [S = Serious] [C=Critical] enter the appropriate letter in the box

Sample Interpretive Media Inspection Work Order with Job Plan

Date printed: 6/23/09 10:37

Facility Management Software System



Work Order Data - by Work Order Number

Work Order 1600506 CA Inspect Interpretive Media – Battlefield Area

Status:	WAPPR	WO Report Date:	10/08/2008	Target Start Date:	10/01/2008
Location:	16389		HOBE Battlefield Area	Scheduled Start Date	Scheduled Finished Date
Equipment:	520586		Interpretive Waysides		
PM:					
Job Plan:	21533		Inspect Interpretive Media (Job Plan)	Time:	_____Hr _____Min

Feature Code	Description	Done (Y/N/NA)	Oper. #	U/M	Deficiency (Y/N)	Quantity	Evaluation Code (Circle One)
G909401	Wayside Panel	_____	10		_____	_____	C M S
G909402	Wayside Base	_____	20		_____	_____	C M S
G909403	Exhibit Structure	_____	30		_____	_____	C M S
G909404	2-Dimensional Exhibit Graphic	_____	40		_____	_____	C M S
G909405	Exhibit Case	_____	50		_____	_____	C M S
G909406	Exhibit Lighting System	_____	60		_____	_____	C M S
G909407	Custom 3-Dimensional Exhibit Element	_____	70		_____	_____	C M S
G909408	Exhibit Repro. Historic Furnishing	_____	80		_____	_____	C M S
G909409	Exhibit Audiovisual System	_____	90		_____	_____	C M S

Inspected by: _____

Supervisor: _____

Interpretive Media Accessibility Checklist

The accessibility checklist is currently under development.