

Chapter 8: Conservation Treatment

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CHAPTER 8: CONSERVATION TREATMENT

A. Overview

This chapter explains what conservation treatment is, when it is appropriate, and how to obtain the services of a professional conservator. Care of NPS museum collections is based on a **preventive conservation** approach (See *Chapter 3: Preservation: Getting Started* for more information). **A good preventive conservation program minimizes the need for conservation treatment.** However, preventive measures are sometimes inadequate and interventive conservation treatment performed by a conservator is necessary to help preserve an object:

- If an object has inherent vice and preventive measures are insufficient to reduce the rate of deterioration to a tolerable level, an appropriate conservation treatment can prolong the life of an object. For example, a paper conservator can wash deteriorated wood-pulp paper to remove acidic by-products.
- If an object is extremely fragile due to advanced deterioration, appropriate conservation treatment can increase its stability and durability. For example, a paintings conservator can re-attach flaking paint.
- If an object is to be used for exhibit, research, or publication, conservation treatment may be needed. For example, a textile conservator may construct a special mount for a flag to allow it to be exhibited vertically, or an archeological conservator can clean a metal artifact to reveal important markings.

Conservation treatment is hands-on, alterative ("interventive") work performed in order to preserve and/or restore objects. Only trained conservators who have experience in the appropriate material (such as paintings, textiles, furniture, photographs, books, paper, archeological objects, ethnographic objects, natural history specimens) should perform conservation treatments on objects.

If conservation treatment is required, the park staff must ensure that:

- objects, archives, and specimens receive the most appropriate treatment for their continued preservation and use
- treatment is appropriate and takes into consideration an object's condition, history, significance, and use(s)
- treatments are performed by skilled, experienced conservators and properly documented

Anyone who carries out a treatment on NPS museum collections must agree to follow the principles and practices specified in the Code of Ethics and Guidelines for Practice of the AIC (American Institute for Conservation of Historic and Artistic Works, 1994). Refer to [Appendix D](#) for a copy of the Code of Ethics. Include this requirement in all contracts.

1. *What is preservation and how is it accomplished?*

NPS policy emphasizes *preservation*. *Management Policies*, Section 5.3.5.5.1 states that “an item in a museum collection will be preserved in its present condition through ongoing preventive care if:

- that condition is satisfactory for exhibit or research; or
- another treatment is warranted, but it cannot be accomplished until some future time.”

Preservation encompasses all actions taken to prolong the life of an object.

Ongoing preventive conservation (preventive care) is always the preferred way of ensuring preservation of museum collections. Conservation treatment carries inherent risk and is generally more resource and time intensive.

However, if preservation cannot be satisfactorily accomplished through preventive conservation, interventive measures (conservation treatment) may be considered.

After a conservation treatment is carried out, treated objects should be returned to storage or exhibition conditions that reflect good preventive conservation practices. If objects are returned to substandard conditions, they cannot be effectively preserved.

Many of the chapters and appendices of the *Museum Handbook*, Part I, contain additional information on collection preservation, including establishing a good preventive conservation program. In particular, see *Chapter 3: Preservation: Getting Started*.

2. *What is conservation treatment?*

Conservation treatment is the deliberate alteration of the chemical and/or physical aspects of museum objects aimed at prolonging their existence. NPS policy recognizes two types of conservation treatment. These are:

- *Stabilization* to slow or prevent further deterioration. The American Institute for Conservation (AIC) defines stabilization as “treatment procedures intended to maintain the integrity of cultural property and to minimize deterioration.” See the AIC web site, “[Definitions of Conservation Terminology](#).”
- *Restoration* to an earlier appearance. The AIC defines restoration as “treatment procedures intended to return cultural property to a known or assumed state, often through the addition of nonoriginal material.”

Although conservation treatment is by definition interventive, the overarching goal is to minimize the amount of intervention. This reduces the possibility of

compromising the object's historical, scientific, or cultural significance or inadvertently causing unanticipated deterioration in the future

Well-intentioned efforts to repair, stabilize, or restore objects have often proved detrimental to their long-term preservation. Earlier treatment techniques, including those performed by conservators, have negatively impacted or even destroyed important features of objects. In some cases, no treatment would have been a better choice. This is why a preventive care approach to preservation is preferable.

When deciding whether to pursue conservation treatment or to maintain an object through preventive conservation practices, it is your responsibility to always opt for the approach that best serves the long term well-being of the object. Base your decision on close consultation with conservators as well as your regional curator, park superintendant, and other knowledgeable colleagues..

3. *What is stabilization?*

Stabilization is a type, or level, of conservation treatment intended to stop or minimize an object's deterioration while maintaining its integrity.

Stabilization treatments are generally the least invasive (interventive) form of conservation treatment. NPS *Management Policies*, Section 5.3.5.5.1, states that "an item will be stabilized if:

- preventive measures are insufficient to reduce deterioration to a tolerable level; or
- the item is so fragile that it will be endangered under any circumstances."

Stabilization treatments are not, however, without risk. Information can be destroyed with any interventive treatment, even if performed only with preservation as the goal. New analytical techniques are always being developed and later generations often re-evaluate objects and have different ideas about what makes them significant. Even simple cleaning permanently changes an object and can result in the destruction of information about the object.

4. *What is restoration?*

Restoration is treatment procedure intended to return objects to a known or assumed former state, often through the addition of non-original material. NPS policy on restoration is very specific (see NPS *Management Policies*, Section 5.3.5.5.2). An item may be restored to an earlier appearance if:

- restoration is required for exhibit or research purposes;
- sufficient data about that item's earlier appearance exists to enable its accurate restoration; and
- restoration will not modify that item's known original character.

Additionally:

- restoration will be accomplished using the techniques and materials that least modify the item
- restoration materials should be removable at a later time with minimal

adverse effects

- restored areas should be distinguishable from original material and thoroughly documented
- restoration efforts will take into account the possible importance of preserving signs of wear, damage, former maintenance, and other historical and scientific evidence
- take ‘before, during, and after’ photographs of the object to document conservation needs, treatment, as well as any discoveries.

5. *Why use reproductions?*

The use of reproductions is a preservation strategy. By making a reproduction of an object that can be used for interpretive and/or educational presentations, the original can be safely stored in conditions conducive to its long-term preservation. Reproductions are often used when the originals are too fragile, or would be subject to undue deterioration or loss, or the length of the exhibit will cause damage to the original.

See *Museum Handbook*, Part III, Chapter 4: [Two-Dimensional Reproductions](#), and Chapter 5: [Three-Dimensional Reproductions](#) for further information.

6. *Why should treatments be reversible?*

No treatment is completely reversible. Some cannot be reversed at all, for example, you cannot replace the stain you have cleaned from a textile or dirt from a painting surface. However, conservators must use, wherever possible, treatments and materials that can be reversed or removed without damaging the original material of the object.

The principle of reversibility is important for a number of reasons:

- Objects may need to be treated again and the materials used in a prior treatment may need to be removed first.
- A treatment may not produce the desired outcome and may need to be reversed.
- In the future, a better and/or less invasive treatment may be developed, and the current treatment may need to be reversed.

7. *What NPS guidance is available to help me make decisions about conservation treatment?*

Refer to *Chapter 3: Preservation: Getting Started* for information on the roles of the curator/collections manager and the conservator and for information on the Collection Condition Survey (CCS). For specific information about common preservation issues for different types of materials and collections, see the appendices in this handbook. In addition, *Management Policies* (Chapter 5: Cultural Resource Management) discusses NPS policy for conservation treatment of museum objects.

8. *When do I need a conservator?*

A professional conservator must undertake all interventive conservation treatments. A conservator is trained and skilled in the theoretical and practical aspects of preventive conservation and interventive conservation treatment.

Most conservators specialize in the treatment of specific types of materials or objects. This includes specialists who work on archeological materials,

books, ethnographic objects, natural science specimens, fine and decorative art objects, photographic materials, paintings, paper, sculpture, textiles, or wooden artifacts. There is some overlap among these specialties; one conservator may work on a range of these materials.

For more information on the roles that collection management specialists, curators and conservators play in the preservation of museum objects, see Chapter 3: Preservation: Getting Started.

B. Factors to Consider Before Conservation Treatment

1. *How will I know what conservation treatment is appropriate?*

Treatment choices for objects and collections will vary based on the reasons the objects were collected and their planned use. Identify what you consider to be important about the object for the purposes of research, education and exhibit, now and in the future. Be sure to share your reasons for preserving an object or collection with the conservator and put them in writing. Consult with the regional curator and other museum professionals to learn more about your treatment options. Discuss any proposed conservation treatments with the regional curator.

Appropriate treatment is developed through discussion between conservator and curator:

- Consider all technical, historic, scientific, cultural, religious, and aesthetic aspects of an object.
- Explain why you think conservation treatment is necessary.
- Talk about the planned use(s) of the object.
- Explain where the object will be exhibited or stored.
- Discuss the wishes of affiliated ethnic groups.

Developing a shared understanding of the object and its problems will lead to a treatment that takes into account all of the above factors. Do not approve a treatment simply to make an object look “like new” or meet a purely subjective aesthetic standard.

Discuss treatment options thoroughly with a conservator. Carefully consider the following before discussing treatment options with a conservator:

Reasons to opt for a *stabilization* treatment:

- *Collections may document the history of a technology.* Objects preserve various kinds of information that indicate how they were made and used. These include:
 - design features
 - composition
 - source and processing of raw materials

- fabrication and manufacturing techniques
- accretions
- signs of wear
- repair or alterations

In discussions with the conservator, pass on information you may have about paint, markings, signatures, grime, metallurgical features, residues of associated materials, and other easily lost remnants.

- *Collections may have scientific research value.*

Most systematic archeological and natural history collections, archival collections, as well as certain ethnographic and historical collections are preserved as evidence or as information for research and study purposes. For these collections, appropriate treatment always involves the bare minimum of intervention, and only if absolutely necessary to preserve the object.

- *Objects may be culturally or legally significant.*

Many park collections contain objects that have special significance to American Indians, Native Alaskans, Native Hawaiians, or other associated cultural groups. Identify the culturally relevant group, if any, for all items in your collections. Consult with a qualified anthropologist to help identify relevant groups, materials, community consultants, and questions that should be raised when considering conservation treatment. Consult with representatives of American Indians, Native Alaskans, Native Hawaiians, or other associated groups to help identify significant objects and determine appropriate treatments. If there are questions about the acceptability of a treatment, *do not proceed* until the questions can be satisfactorily answered.

Collections may also have associations with eminent individuals, groups, events, or sites. You should be sure that treatment does not destroy evidence of that association. For example, you would not remove bloodstains on the coat Abraham Lincoln was wearing when he was assassinated.

There may also be legal issues to consider. For example, some documents (such as land records) may be used as legal proof and treatment may affect their legitimacy. Consult with the regional curator and a solicitor. See also, *Museum Handbook*, Part III, [Legal Issues](#).

Reasons to opt for a *restoration* treatment:

- *Objects may have a special function.*

Some objects are collected because they serve or perform a special function. For example, a certain musical instrument may produce a quality of sound worth preserving. To preserve the functional capability of an object, worn out or defective parts may require replacement. (If the

part is replaced, retain the original part that was removed together with the object.) When considering a treatment for this kind of object, determine the answer to the following question: “Is preservation of function more important than preservation of the original material?”

- *Appearance of the object may be important.*

Restoration is often carried out to improve appearance, especially when an object is prepared for exhibit. You may have to make a decision either to leave signs of wear and tear or to restore an object closer to its original appearance. Determine the answers to the following questions:

- Why do I want to restore the former appearance? For example, when deciding whether to replace a missing leg on a chair to be displayed in a historic house, consider that the inhabitants probably did not use a chair with a missing leg.
- When would restoration go too far and be fraudulent or unethical? For example, overpainting original material so that some of the original is hidden would be misleading and unethical-

2. *What guidelines should I follow when considering restoration?*

The line between stabilization and restoration is not always clear. For example, a torn map can be stabilized by encapsulation between two sheets of Mylar®. This is stabilization. If the conservator in-paints around the tear and mends the tear this is considered restoration..

Follow these guidelines when reviewing a treatment proposal that suggests restoration:

- Restoration should be based on known facts, not conjecture.
- Restoration should not modify the original character (shape, size, information, visual aesthetic) of an object or item.
- Restoration should be minimally interventive. Agree on techniques and materials that cause the least modification to an object and that can be removed most completely, if necessary, with minimum effect.
- Restored areas should be distinguishable from original material upon close visual inspection, but need not be conspicuous. Ensure that all restored areas are fully documented in the treatment report.
- Restoration should take into account the significance of wear, damage, former maintenance, or other historic or scientific evidence.

3. *What is routine maintenance and how does it affect an object?*

Many of the objects in NPS collections were once used in the everyday world. As utilitarian objects, they required repair and routine maintenance in order to function properly. However, once removed from regular use, continuing the same maintenance procedures can actually cause deterioration. For example, while it may be appropriate to apply leather dressings to horse tack to keep pieces flexible and clean while they are being used. However, when tack is in storage or displayed in a museum, the application of leather dressings causes buildup on the leather and can accelerate deterioration.

Once collections enter the museum collection, they are no longer used and

subject to the same wear and tear. In the museum setting, they may be subject to different risks of deterioration in storage, on exhibit or during study. Therefore, the procedures and materials appropriate for their care are likely to be different.

Note: *Routine maintenance that was once necessary for an object's upkeep may be detrimental to its long-term preservation in a museum collection. Consult with a conservator and your regional curator.*

Work with a conservator to ensure that routine care and maintenance procedures are appropriate for the long-term preservation of the object. For examples see:

- *Conserve O Gram* 9/1, [Leather Dressing: To Dress or Not to Dress](#)
- *Conserve O Gram* 10/3, [Preparing Historic Motorized Vehicles for Storage and Exhibit](#)

C. Documentation of Conservation Treatment

Document all conservation treatment in writing. Make sure that treatment records include visual documentation such as photographs, drawings, analytical results, spectra, and digital images. NPS conservation treatment policy follows the guidelines for documentation in the *Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works* (AIC) (see Figure 8.1).

File all hard copy of treatment documentation in the appropriate accession or catalog folder and append electronic data to the ICMS. See the *ICMS User Manual* for guidance on how to import and append data and scanned files into ICMS.

1. *Why is conservation documentation important?*

Documentation is important for these reasons:

- Conservation documentation is a written and visual report of the work that is done. It provides the park staff with detailed information on the condition of the object, including how it has been altered, what parts are composed of original material, and what has been added or removed during previous treatments or restorations.
- It serves as a permanent record of the treatment procedures performed and the materials and methods used.
- It spells out the understanding reached between the curatorial staff and the conservator on the treatment, including the extent and type of any stabilization or restoration treatment.
- It provides information that will help future conservators to assess the condition of an object and devise further treatment
- It makes it possible to assess the success or failure of treatment methods and materials over a long period of time.
- It may last longer than the object itself and become the only record.

2. *What is the ICMS Conservation module?*

The Conservation associated module (or Conservation module) is a feature of the Interior Collections Management System (ICMS) that allows parks to link conservation documentation to object catalog records. Basic catalog record information automatically populates the new conservation records when they are created and the catalog number is entered. The new conservation record is then linked to the object's catalog record, where it can be accessed through the supplemental information tab under "Conservation."

The simplest way to incorporate conservation information into the module is to copy and paste the information from the conservator's documentation directly into the appropriate fields or add a scanned image of the conservator's report. To do this, the conservator must provide their documentation in an accessible electronic format.

3. *What information can be recorded in the Conservation module?*

Complete instructions for using the Conservation module can be found in the *ICMS User Manual*, Chapter 4: [Associated Modules](#).

The Conservation module can record:

- conservation needs of the object
- statement of work for treatment
- previous conservation treatments
- materials used for treatment
- results of treatment

Parks use the Conservation module to:

- ensure that critical information is maintained in electronic format so documentation does not get lost over time. Paper reports are more difficult to track over time. Data in ICMS remains associated with the objects for the long-term. In addition, the National Catalog maintains a backup of each park's data through their annual submission.
- guide the conservator to provide specific kinds of information in their documentation; the default and customizable fields in the module facilitate this.

Conservators use the Conservation module to:

- easily incorporate information they generate into park catalog records.
- ensure that their documentation is readily available to future curators, conservators, and researchers.
- integrate conservation information in the primary database used to make management decisions about collections.
- assist in managing conservation for the object.

ICMS facilitates:

- estimation of hours for treatment projects on multiple objects
- documentation of the amount of work accomplished in a year
- word searches on treatment materials or types of objects treated
- searches to find similar objects from past work
- searches to find all work done for a park over numerous projects

4. *What documentation should the conservator provide?*

In addition to information recorded in the Conservation module, be sure to have the conservator provide printed and electronic copies of all documentation including:

- *Written reports:* The conservation profession requires documentation of all examinations, scientific investigations, and treatments through the creation of permanent records and reports. These written reports often contain information on research into materials and technology that are beyond the scope of the fields in the ICMS Conservation module. Reports are prepared either in a narrative style or checklist format (or a combination of both). See Figures 8.2, 8.4, and 8.5 for sample reports. For multiple object treatments, summary reports may be also included.
- *Photographs:* Treatment documentation should include detailed photography. A complete series should include photos taken before, during, and after treatment. Photographic documentation includes digital images saved as lossless TIFF files and museum quality hard copy full color prints. Specialized photographic and lighting techniques may be used. These include use of:
 - *ultraviolet light*—some restorations fluoresce and become more visible
 - *infrared light*—may reveal details under layers of grime and old coatings; may improve the legibility of difficult-to-read inscriptions
 - *raking light*—shows surface irregularities by illuminating the surface from an acute angle
 - *reflected light*—shows variation in gloss or texture by recording the reflection of a light source
 - *x-ray radiography*—may reveal internal features
 - *transmitted light*—may show missing areas in translucent objects
 - *photomicrography*—shows details too small to see with the naked eye
- *Drawings and illustrations:* These media are used to note changes or significant features that are hard to illustrate with photographs (for example, on textiles: repairs, selvage edges, and changes in sewing threads).

- *Analytical records:* If analysis is undertaken to identify materials or techniques, additional types of information may be generated, such as analytical reports and interpretation, spectra, and graphs. Parks must keep complete sets of the data as part of the record of conservation work.

	MINIMUM DOCUMENTATION REQUIREMENTS	RECOMMENDED DOCUMENTATION REQUIREMENTS
All Documentation	Include: <ul style="list-style-type: none"> • purpose • documentation by (name) • date • object name • catalog number • object description/unique information • medium/materials • measurements • marks/labels/features 	Include associated records such as: <ul style="list-style-type: none"> • previous treatment • excavation reports • curatorial reports • scientific reports
Examination Reports	Include: <ul style="list-style-type: none"> • observations • present condition [Cond Descrip]* • notation of accessory materials or associated elements • past treatment evidence [Original Cons] • methods of examination and testing 	Include: <ul style="list-style-type: none"> • drawings/photos to illustrate condition and relevant details (include control numbers) • size scale • gray/color scale (photos) • light direction (photos) • object ID
Treatment Proposals:	Include: <ul style="list-style-type: none"> • treatment plan [Cons Descrip] • materials to be used [Cons Materials] • time estimate [Est Hours] • cost estimate (when appropriate) • documentation of approval for recommended treatment by curator 	Include: <ul style="list-style-type: none"> • objectives and limitations of treatment, benefits, and risks • general description of properties of materials to be used • statement that minor variations in treatment may be required as treatment progresses
Treatment Reports:	Include: <ul style="list-style-type: none"> • conservator name [Cons By] • report date/treatment date [Cons Date] • all procedures used [Results] • all materials, including chemicals, used • procedures used that deviate from proposal • added materials that remain on object • materials used on object that do not remain • removed materials and their disposition • materials obscured by treatment • new information about object revealed in treatment (including features hidden by assembly) • changes in object as a result of treatment 	Include: <ul style="list-style-type: none"> • procedures and materials considered, but not chosen • recommendations for subsequent care and maintenance • treatment time • treatment cost (when needed)

	including its state after treatment <ul style="list-style-type: none"> • names of assisting conservators, consultants, and contractors • dated visual documentation • recommendations for subsequent care and maintenance 	
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*Equivalent ICMS Conservation Module field names in [parenthesis]

Figure 8.1. Information Required in Conservation Treatment Documentation
(Adapted from *Code of Ethics and Guidelines for Practice of the AIC*)

5. *What documentation steps are taken when an object is treated?*

Most object conservation treatment documentation includes the following steps:

1. Park staff provides the conservator with relevant historical information, including records of any prior examinations or treatments.
2. The conservator prepares an *examination report* (see Fig. 8.2). This examination report can be based on information generated in a previously completed Collection Condition Survey (CCS). (See [Chapter 3: Preservation: Getting Started.](#)) The examination report should include:
 - a description of the materials, structure, and construction of the object
 - an analysis of materials, as appropriate
 - a description of the condition of the object and evidence of past treatment, with reference to any previous documentation
 - any deductions, interpretations, or comments

At the discretion of the park curator, the conservator may combine the *examination report* with the *treatment proposal* to form one document containing the above information as well as the proposed treatment.

3. The conservator prepares a *treatment proposal*. See Figure 8.4 for a sample treatment proposal. This document outlines the proposed treatment along with alternative approaches. The proposal usually does not list all the technical details that are later listed in the treatment report. The treatment proposal should address all the problems identified in the examination report. It should include time/expense estimates. The park curator should review the treatment proposal in consultation with the regional curator. Once satisfied with the treatment proposal, the curator approves it with the concurrence of the park superintendent.

The conservator must discuss and provide in writing, any significant departures from the treatment proposal prior to actually implementing them and receive written approval from the curator and Contracting Officer (CO), if applicable.

4. The conservator prepares a *treatment report*. See Figure 8.5 for a sample treatment report. In this document, the conservator details all the steps of the treatment performed. The conservator discusses the treatment results and should make recommendations about future care, exhibition, and storage

requirements. The conservator also discusses treatment changes and rationale in the final report.

6. *What documentation should park staff generate on its own treatment activities?*

Record two types of activities:

- *Housekeeping*

You must keep a record of all housekeeping (ongoing, repeated actions or tasks done to preserve collections) performed by staff. Housekeeping tasks may include:

- cleaning (method and frequency)
- dusting
- waxing
- maintaining proper fluid levels in wet specimens

Record this information in the ICMS Maintenance module. Instructions for using the module can be found in the *ICMS User Manual*, Chapter 4: Associated Modules. Provide this information to the conservator as part of the historical information about the object.

For more information about developing a housekeeping plan, including the necessary documentation, see Chapter 13: [Museum Housekeeping](#).

- *Changes in condition*

Record any observed changes in the condition of objects, whether or not they have or will undergo conservation treatment. Record these changes in as much detail as possible in the Catalog Record portion of ICMS under the condition and condition description fields.

D. Obtaining the Services of a Conservator

When you determine that you need a conservator:

- Take time to locate an experienced, well-qualified conservator who specializes in the type of object(s) you want treated. This is critical to the quality of treatment an object will receive. Consult with your regional curator and local museum professionals.
- Prepare a *scope of work* (SOW) for the project. See Figure 8.2 for a sample scope of work. Contact your regional curator and NPS conservation laboratories to obtain copies of SOWs created for past treatment projects.
- Discuss the entire process and requirements with the conservator and others involved in the project, including the park manager, park curatorial staff, and regional curator.
- Be sure contract conservators understand NPS conservation treatment

policy: *to preserve what remains of an object in as stable a condition as possible.* Provide them with NPS policy and procedural guidelines, including pertinent sections of the *Museum Handbook* and *ICMS User Manual*.

- Make sure that the conservator has a secure storage area, smoke detection system, a fire suppression system and appropriate environmental conditions within the storage and work space..

1. *How do I find a conservator?* Work with your regional curator to find an NPS conservator or a contract conservator with the appropriate knowledge and experience.

The regional curator can help locate conservators and can also help you obtain funding for the project. The regional curator can also help set priorities and determine a time frame for the project, as well as help prepare procurement documents. Discuss the type of project (such as treatment of a single object or group of objects, identification of methods and materials used to create an object) with the regional curator and determine the:

- nature of the object or collection (type of material and condition)
- present use of the object or collection
- planned use of the object or collection (for example, for research or in an exhibit)

2. *How do I decide if a recommended conservator and treatment are suitable?*

Always ensure that the treatment proposal is in response to, and specifically addresses an existing, documented condition. Evaluate treatment recommendations against the AIC Code of Ethics to inform your judgment. In particular, be aware of the following points in the Code:

- *The conservation professional shall practice within the limits of personal competence and education as well as within the limits of the available facilities.* Ask the conservator these questions:
 - What is your training for this sort of treatment?
 - Have you ever treated objects like this before?
 - Do you have the proper equipment to carry out this treatment?
 - Do your facilities offer the appropriate environmental conditions for housing the objects?
 - What kind of insurance coverage do you have?
 - What kind of security and fire protection does your facility have?
 - Can you give me references from previous clients?
 - What is your schedule for completing the work?
- *The conservation professional must strive to select methods and materials that, to the best of current knowledge, do not adversely affect*

objects or their future examination, scientific investigation, treatment or function. Ask the conservator these questions:

- How will this treatment affect future analysis?
- If you do this treatment, can the object be re-treated in the future? Although no treatment is completely reversible, it is possible to use materials and techniques that allow for re-treatment. For example, you may not be able to remove a consolidant added to give structural strength. However, the choice of consolidant should not rule out the use of a later, alternative treatment, if the original treatment fails.

- *The conservation professional shall document examination, scientific investigation, and treatment by creating permanent records and reports.* Ask the conservator these questions:

- What documentation will you provide and how will you produce it? Do you have the ability to produce all documentation in compatible electronic format and on acid-free, neutral pH paper using pigment or carbon-based inks?
- What kind of photo documentation will you do? What equipment will you use to ensure proper lighting, color, etc.? Do you have a digital camera that will produce uncompressed, high-resolution TIFF files and the ability to produce full color, museum quality prints of all digital photos?

- *The conservation professional shall recognize a responsibility for preventive conservation by endeavoring to limit damage or deterioration to objects, provide guidelines for continuing use and care and recommending appropriate environmental conditions for storage and exhibitions, and encourage proper procedures for handling, packing, and transport.* Ask these questions:

- How would you recommend I handle and store this object in the future?
- Do you have any recommendations for the future exhibition of this object?
- Does this object pose health and safety risks to staff or risks to nearby materials?

3. *What do I need to know about contracting for conservation treatment services?*

The following steps are necessary in order to contract for conservation treatment services:

- Create a scope of work (SOW) in consultation with your regional curator and contracting officer. See Figure 8.2, Sample Scope of Work for Requesting Conservation. This document outlines the project and the requirements and expectations for both parties.

Work with your park or regional contracting officer and regional curator to prepare a legally binding contract both parties will sign. This document should include provisions on insurance, liability, and the

assignment of rights, including copyright to the NPS and other clauses tailored to the needs of the contract. See Figure 8.3, Sample Contract Provisions for Insurance and Copyright.

- Work with your regional curator to determine who should serve as the Contracting Officer's Technical Representative (COTR) for the project. You can ask a NPS conservator to serve as (COTR).

Note: The contracting officer (CO) must appoint the COTR. The COTR is a federal employee who provides advice on the technical aspects of the work being contracted, monitors performance of the contract, and must be FAC-COTR trained and certified in accordance with the requirements of the [FAC-COTR program manual](http://wcp.den.nps.gov/Policy-Program/COR/cor.htm) [see <http://wcp.den.nps.gov/Policy-Program/COR/cor.htm>.]

NPS conservators have the technical knowledge to evaluate a treatment proposal and can assist you and the contracting officer with the resolution of technical problems. Therefore, make sure the COTR has expertise in the type of material that is being treated. A COTR must be formally appointed in writing by the contracting officer and the letter of appointment must be acknowledged and signed by the COTR and returned to the CO. During the treatment process, the COTR may evaluate and recommend necessary changes that might arise. However, the COTR must notify the CO of those suggested changes in the SOW that would result in adjustments of cost or time to the contract so that the CO can process a contract modification. Only the CO can approve changes to a contract. The COTR cannot obligate, in any way, the payment of money or extension of time by the Government.

If an NPS conservator is not available, a regional curator or knowledgeable park curator can also serve as the COTR for conservation treatments or any other service provided by a contract conservator.

Make sure the contract states that all works and all rights to those works, including copyrights produced as part the contract belong to the National Park Service. (See Museum Handbook, Part III, Ch 2, [Legal Issues](#), Sec. C.7 and Chapter 3, [Publications](#), Fig. 3.4).

4. *Should the treatment be performed on-site or off-site?*

When preparing the conservation treatment SOW, be sure to address any special needs or considerations that might influence where the object(s) can or should be treated.

Some objects, such as building elements (e.g. an ornamental railing) must be treated on-site. Others can be transported or shipped to other locations for treatment.

When deciding whether it is preferable for objects to be treated on-site or off-site, consider the following questions:

- Does transporting the object put it at greater risk for damage? Evaluate the level of risk, given the fragility and/or complexity of the object.
- What does packing and shipping for the object cost, both in money and staff time?

- Is the object of unusually high value or significance? Does treating it off-site raise issues of unacceptable risk regarding theft or disaster and inadequate insurance coverage?
- How far does the conservator have to travel to treat the object on-site? How would this compare to the cost of packing and shipping?
- Will the conservator need access to special equipment, tools, or workspaces that could not reasonably be made available on site?
- How many objects need treatment? Is it more cost effective to have the conservator come to the park to work on the objects?

Consult with an NPS conservator, your regional curator and park superintendent to determine whether the work should be done on-site or off-site.

5. *How do I work with an NPS conservator?*

Several NPS conservation laboratories work on park museum objects. Conservators from these labs can assist with surveys, carry out treatments and provide advice on conservation and conservation contracting. The NPS labs are:

- Museum Conservation Services, Harpers Ferry Center, Harpers Ferry, West Virginia
- Northeast Cultural Resources Center, Lowell, Massachusetts
- Western Archeological and Conservation Center, Tucson, Arizona

Contact the lab directly for guidance on how to initiate the project. Conservation lab staff will develop a work plan, an estimate of costs, a direct charge authorization, project agreement and a mutually agreeable project schedule in consultation with you. You will work with the conservation lab registrar to prepare the loan paper work and arrange suitable transportation.

6. *When I evaluate a treatment proposal, what should I consider?*

Be aware that every active treatment carries inherent risk. Before you allow conservators to carry out treatment on an object, carefully consider the proposed treatment. Make sure that the proposed conservation treatment is sound, meets the best conservation practice standards, and respects the physical, historic, and aesthetic integrity of an object.

Note; It is highly recommended that you consult with the regional curator and a NPS conservator with expertise in the type of object to be treated and have them review treatment proposals **before** work begins. Assess the treatment itself by examining or talking to others about similar objects that received the same type of treatment. You should also confer with other local museum professionals about the proposed treatment. Once you approve the written treatment proposal, work can begin.

During treatment, the curator (and COTR, if applicable) must review and approve any significant deviations from the proposal. Don't simply accept a recommendation; question and evaluate its quality.

7. *What insurance coverage should the conservator have?*

Conservation treatments are delicate, often complex undertakings and can result in the permanent alteration of objects of great cultural, scientific, or monetary value. Although rare, there is always the potential for significant

damage to (or total loss of) an object as a result of a conservation treatment. As all conservation treatments come with potential risk to the object, it is important that you:

- take great care in selecting a conservator and to evaluate proposed treatments in detail **before** they are approved
- ensure that a non-NPS conservator obtains liability insurance for objects that are going to be treated
- ensure that the objects are covered during transportation to and from the park, and for the time the objects are in the conservator's custody

Consult with the regional curator and the park contracting officer as to what type(s) or level(s) of insurance the contract conservator will be expected to cover, and/or whether the park friends group can purchase short term insurance coverage for the object(s) undergoing conservation treatment, as well as during transportation.

Understand these general guidelines regarding insurance coverage:

- Discuss insurance coverage with the conservator early on in your negotiations. Determine what type(s) of coverage the contract conservator already has, the limits of his/her policies, and whether there is a need to increase or obtain coverage should the park deem it necessary.

State the required types of insurance and dollar amounts in the contract pre-solicitation notice or solicitation so that a prospective contractor is aware of what type of insurance coverage is required prior to start of work if awarded the contract. Insurance policy requirements for contracts are covered in the Federal Acquisition Regulation (FAR) at Subpart 28.3 Insurance (see FAR 28.307-2 for dollar amounts required for cost reimbursement contracts) and see DIAR clause 1452.228-70.

- Contractors/conservators are required to comply with applicable Federal and State workers' compensation and occupational disease statutes. Therefore, the insurance requirements should be stated in the contract. As contractors, conservators (or the business they work or/under) are not covered under the compensation program for park employees.
- At a minimum, conservators must have some form of *commercial general liability insurance* in order to sign a contract with the NPS. Some states make this a legal requirement. This type of policy *does not* cover museum objects. It only covers damage to other types of property and personal injury. For example, if a treatment solution is spilled on carpeting and ruins it, or if a conservator leaves a ladder in a gallery and a visitor is injured by tripping over it.
- Conservators should also have *property damage insurance* specifically designed for conservators or art owners/handlers. This covers loss or damage to objects that occurs while the objects are under the conservators' care or control. This type of policy *does not*

cover damage to objects caused by the conservation treatment itself, even if the conservator made an error. For example, a painting damaged by a leaky roof in a conservator's studio would be covered. A painting damaged by the conservator applying the wrong cleaning solution would not be covered.

- *Professional errors and omissions* (sometimes called *professional liability*) insurance covers liabilities or damage arising from the professional conduct of the conservator due to error, negligence, or omission. This includes damage to the object if it is a result of an error made by the conservator (such as using the incorrect cleaning solution). This type of insurance can be difficult and expensive for a conservator to obtain, especially for high value objects. Efforts are being made to make it more widely available and affordable.

The park should set minimum levels of coverage for the above types of insurance, based on the value of the object(s) undergoing treatment and other factors.

Include insurance requirements in the contract the conservator signs. Work with your contracting officer/contracting office to add appropriate language regarding insurance to the contract for conservation services. See Figure 8.3, Sample Contract Provisions for Insurance Coverage.

8. *What happens after the conservator is selected?*

Once you have selected a conservator, schedule the project. If objects will be transported to the conservator's conservation lab or studio, schedule the shipment dates with the conservator. Discuss packing and shipping methods to ensure the objects are safely transported and not damaged in the course transit. Plan to ship at the beginning or middle of the week rather than on a Friday to avoid unnecessary weekend delays. Consider climate conditions and control measures during shipment.

Review all examination reports and/or treatment proposals. Discuss your questions with the conservator. The person with delegated responsibility (usually the curator) must approve and sign a treatment proposal before work can begin. Get advice from your regional curator or NPS conservators to ensure that the proposal describes an appropriate treatment. File a copy of the signed treatment proposal in the appropriate catalog folder or accession file.

9. *What are my responsibilities once the treatment proposal is approved?*

Routinely monitor the work by visiting the conservation lab or discussing progress with the conservator. Include a requirement in the scope of work for the conservator to provide the park with on-going written updates. After treatment is completed, the conservator will return the objects to the park. Before approving payment, ensure that all conditions of the contract and/or SOW were completed satisfactorily. Review electronic data provided by the conservator and incorporate accepted data into the ICMS Conservation module. Where possible, have a NPS or other conservator review the work. File all documentation (reports, photographs, drawings, etc.) in the proper Catalog Folder or Accession File.

10. *Where can I find information on how to treat objects in an emergency?*

Refer to *Chapter 10: Emergency Planning*, for information on planning for and recovering from an emergency. This chapter also gives you information on basic actions you can take to minimize damage. In particular, review

Figure 10.13, First 48 Hours Emergency Response Checklist.

Also refer to the Emergency Response and Salvage Wheel available from Heritage Preservation <www.heritagepreservation.org>. This tool gives you basic steps to take immediately after a disaster strikes.

Contact a conservator as soon as possible for advice on how to recover from an emergency.

E. Glossary

Accretion – accumulated materials not original to the object that are attached to the surface of an object. For example, calcium deposits may accumulate on buried (archeological) ceramics.

Conservation treatment – the deliberate alteration of the chemical and/or physical aspects of objects, aimed primarily at prolonging their existence. Treatment may be categorized as stabilization or restoration.

Inherent vice – the nature of the material itself or the result of manufacturing techniques that cause an object to deteriorate more rapidly than normal, or that make stabilization nearly impossible. For example, some nineteenth and 20th century silk fabrics were sometimes treated with metallic compounds that cannot be removed from the fabric and cause the fabric to split and powder. "The quality of a material or an object to self-destruct or to be unusually difficult to maintain." Examples include nitrocellulose films and wood pulps. Conservation Resources for Art and Antiques, Washington Conservation Guild, 2001

Intervention – taking direct, hands-on action to modify the condition of an object

Minimal intervention – overarching goal of any conservation treatment; reduces the possibility of compromising the object's significance or inadvertently causing increased deterioration in the future

Preservation – encompasses all actions taken to prolong the life of an object

Preventive care – synonym for preventive conservation

Preventive conservation – mitigation of deterioration and damage to objects through non-interventive actions, including maintenance of proper storage conditions, handling and shipping procedures, and emergency preparedness and response

Reproduction – a copy of an item for exhibit, interpretive, educational, sale, research or other purpose, made when use of the original would be inappropriate or would cause undue deterioration or loss

Restoration – conservation treatment that attempts to return objects to a known or assumed state, often by removing additions not considered historically important, replacing missing parts, renewing finishes, and/or concealing damage

Reversibility – the principle of using materials and techniques that can be removed or undone, in so far as possible, should re-treatment of an object become necessary

Spectrum – a graphic or photographic representation of the distribution of energy emitted by a radiant source. For example, spectra might be produced by analytical techniques used to identify the type of varnish on a piece of furniture.

Stabilization – conservation treatment using procedures intended to minimize an object's deterioration while maintaining its integrity.

F. Selected Bibliography

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- Williams, Stephen L. "Preventive Conservation: The Evolution of a Museum Ethic." In *Museum Ethics*. New York: Routledge, 1997.

G. Web Resources

- American [Institute for Conservation of Historic and Artistic Works](http://www.conservation-us.org) (AIC). www.conservation-us.org.
- [Canadian Conservation Institute](http://www.cci-icc.gc.ca) (CCI): www.cci-icc.gc.ca.
- [Conservation OnLine](http://cool.conservation-us.org) (CoOL): cool.conservation-us.org.

[The Getty Conservation Institute](http://www.getty.edu/conservation): www.getty.edu/conservation.
National Park Service *Conserve O Gram* Technical Leaflet Series:
[Northeast Document Conservation Center](http://www.nedcc.org): www.nedcc.org

H. List of Figures

- Figure 8.1 Information Required in Conservation Treatment Documentation
- Figure 8.2 Sample Scope of Work for Conservation Treatment
- Figure 8.3 Sample Insurance and Copyright Requirements for Inclusion in a Contract
- Figure 8.4 Sample Narrative Examination Report
- Figure 8.5 Sample Treatment Proposal
- Figure 8.6 Sample Treatment Report

SCOPE OF WORK (Sample)
Object Conservation Treatment
[Park Name]

I. Background Statement

Provide information on the collections object(s) undergoing treatment and why the treatment is needed (to prepare for exhibition, slow deterioration, etc).

The Park [Park name, address, telephone number, museum curator/contact, email address] requests conservation treatment for the following object(s): [list object(s)].

II. Purpose/Objectives

The purpose of the work is to provide 1) examination of object(s) in need of conservation treatment at [PARK], including generation of an Examination Report and a Treatment Proposal, 2) upon written approval of the proposal(s) by [PARK], conservation treatment of the object(s) and subsequent submission of a Treatment Report and other documentation as noted below. This work is to be primarily performed (on site / off-site).

Prior to entering into a contract, the Contractor shall:

A. Agree to fully comply with the *Code of Ethics and Guidelines for Practice* of the American Institute for Conservation of Historic and Artistic Works (AIC) in all work performed.

B. Provide a vitae containing the relevant qualifications and experience of the Contractor and any other the individuals who will be involved in the examination and treatment process, including an estimate of the nature and extent of their anticipated involvement. This will include references to similar work that clearly demonstrates an expertise in the conservation of museum objects and a history of completing work of this scope and character. Include a comprehensive work history that shows specialized training and/or education in the field of conservation.

C. Provide a list of references from museum professionals with first-hand knowledge of work performed and proof of membership in AIC.

D. Provide a sample completed Examination Report (with appropriate redactions to protect privacy as needed).

E. Provide a prior example of a Treatment Report for work completed (with appropriate redactions to protect privacy as needed).

F. Provide proof of insurance for the following types and amounts of insurance coverage: [List of insurance types and coverage amounts required.] See Figure 8.4: Sample Insurance and Copyright Requirements for Inclusion in a Contract. If work is to be performed on-site, provide a copy of liability insurance.

G. If examination and/or treatment of object(s) is to be performed off-site, Contractor shall provide a description of the facility where activities are to be performed, including the applicable portions of a standard AAM facilities report addressing climate control, security and fire detection systems. Off-site work will require transport; the Contractor shall use appropriate museum and fine art shipping practices for packing and transport to and from the Park. A description of the planned transport procedures and insurance coverage must be included.

Prior to entering into a contract, the Park must complete:

Provide copies of any previous surveys or reports that may assist the conservator in understanding the object(s) to be treated, including:

Figure 8.2. Sample Scope of Work for Requesting Conservation Treatment

- Documentation/history of the object(s)
- Collection Condition Survey (CCS), if applicable to the object(s)

If the contractor will be on-site at the park for examination and/or treatment, the Park will provide:

- A suitable work space, separate from collections storage.
- Supervised access to collection storage rooms, vaults, cabinets, shelves, and other locations of museum objects as necessary.
- Opening and closing of storage cabinets, vaults or other containers that may be locked.
- Assistance with moving heavy or unwieldy objects.
- Limited access to museum object accountability (catalog and accession) and conservation (treatment and survey) records when required.
- Answers to questions about existing environmental monitoring and control, preventive care of objects, uses of objects, plans for future exhibition of objects, and the Park's pest management program.
- Other relevant information as needed.

III. Tasks

Independently and not as an agent of the Government, the Contractor shall provide all labor, materials, facilities, and travel necessary to execute conservation treatments on the object(s) listed and described above.

The Contractor will complete the work in two phases:

Phase I: Examination and Treatment Proposal

1. Conduct hands-on examination of the object(s) and produce an individual Examination Report and Treatment Proposal, including full-view obverse and reverse photographs for each object. The treatment proposal shall be sensitive to the cultural, display, and other specified needs of each object.
2. Provide both printed and electronic copies of the Examination Report, Treatment Proposal, and photographs for the object(s).

Phase II: Treatment and Treatment Report

1. Commence treatment of the object(s) upon Park approval of the Treatment Proposal, Examination Report, and photographs for each object.
2. Document and photograph the object(s) in detail during (if appropriate) and after treatment, producing a final Treatment Report and, at minimum, a full-view obverse and a full-view reverse photograph of each object.

Figure 8.2. Sample Scope of Work for Requesting Conservation Treatment (continued)

3. Provide both printed and electronic copies of the Treatment Report, and photographs for the object(s). Treatment Report must include Contractor's recommendations for improvements to object storage and exhibit conditions as well as general suggestions for ongoing preventive care.

4. Upon completion of the treatment and delivery of the Treatment Report and photographs, the Contractor will meet with the Park superintendent and designated curatorial staff to review the results of the treatment. The close-out meeting should cover not only the treatment results, but the Contractor's recommendations for the future storage and exhibition of the treated objects.

IV. DELIVERABLES AND PAYMENT SCHEDULE

Deliverables. The Contractor shall submit deliverables in two phases:

Phase I

1. An Examination Report and Treatment Proposal for each object or group of like objects. Report and Proposal shall be prepared using software approved by the Park, and either be:
 - entered directly into the ICMS Conservation associated module by the Contractor or
 - delivered to the Park in a digital format of the Park's choosing.

The Park shall also be furnished with printed copies of the Report and Proposal in an approved format and on neutral pH, high alpha-cellulose paper (using carbon or pigment-based inks).

2. Full-color examination photographs of each object, delivered to the Park in both printed (using neutral pH, high alpha-cellulose paper and pigment-based inks) and digital form (lossless .TIF files with Dublin Core® schema metadata). Each object examined shall, at minimum, be photographed in full-view obverse and reverse.

All Phase I work shall be completed by **[Date]**.

Phase II

- A draft and final Treatment Report for each object or group of like objects that the Contractor performs treatment on. Report shall be prepared using software approved by the Park, and either be:
 - entered directly into ICMS Conservation associated module by the Contractor or
 - delivered to the Park in a digital format of the Park's choosing.

The Park shall also be furnished with printed copies of the Report in an approved format, printed on neutral pH, high alpha-cellulose paper (using carbon or pigment-based inks).

- Full-color photographs of each object taken during treatment (if appropriate) and after completion of treatment. Photographs should be taken using a digital or film camera, and delivered to the Park in both printed (using neutral pH, high alpha-cellulose paper and pigment-based inks) and digital form (lossless .TIFF files with Dublin Core® metadata).
- A signed statement that all rights to all works produced under this contract, including photographs belong to the National Park Service.

Figure 8.2. Sample Scope of Work for Requesting Conservation Treatment (continued)

- A meeting with the Park superintendant and designated curatorial staff to review the results of the treatment and the Contractor's recommendations for the future storage and exhibition of the object(s).

All Phase II work shall be completed by **[Date]**.

Note:

- All reports, proposals, and photographs shall be created in accordance with the American Institute for Conservation of Historic and Artistic Works (AIC) *Code of Ethics and Guidelines for Practice*.
- All work will be subject to inspection and acceptance by the designated Contracting Officer's Technical Representative (COTR). If submitted deliverables are not to the satisfaction of the COTR, revisions/further drafts must be submitted by the Contractor until the issue(s) are corrected.

Payment Schedule. The Contractor shall be paid in two phases:

Phase I

Following review and approval of the Examination Report, Treatment Proposal, and photographs by the COTR. Contractor shall submit an invoice for no more than [XX]% of the total contract amount.

Phase II

Following: a) Review and approval of the Treatment Report and photographs by the COTR, and (b) a meeting between the Contractor and the Park superintendant and curators to discuss results and recommendations. Contractor shall submit an invoice for the remaining [XX]% of the total contract amount.

If documentation is unable to be delivered in person, send to:

[Name - Address - Telephone number – Contact (museum curator) Email Address]

Figure 8.2. Sample Scope of Work for Requesting Conservation Treatment (continued)

SAMPLE INSURANCE AND COPYRIGHT REQUIREMENTS FOR INCLUSION IN A CONTRACT

When contracting for conservation treatment, work with your contracting officer to include the insurance and copyright provisions outlined below:

Insurance

- Coverage shall not be canceled or materially changed without 30 days prior notice, in writing, to the Park. No cancellation provision in any insurance policy shall be construed to negate or void the continuous duty of the Contractor to furnish the required insurance during the term of this Agreement.

The contractor will provide:

- Certificate of insurance or proof of current commercial general liability insurance on an occurrence basis with minimum coverage of \$1,000,000 per occurrence and a minimum of \$2,000,000 in the annual aggregate, including but not limited to; premises/operations (including off-site operations), blanket contractual liability and broad form property damage. This covers the conservator in the event bodily injury or property (non-collection) damage occurs to others as a result of their work, such as damaged to the building.
- Certificate of insurance or proof of current *property insurance* for conservators or art owners/handlers. This covers the loss or damage of museum objects while they are under the Contractor's care or control. The minimum amount of coverage should reflect the appraised value of the object(s) undergoing treatment (as determined by an independent appraiser).
- Certificate of insurance or proof of current *errors and omissions (professional liability) insurance*, if deemed necessary by the park. This covers liabilities and damage arising from the professional conduct of the conservator due to error, negligence, or omission.

Copyright

- The contractor will provide a signed release assigning all rights, including copyrights for works produced for this contract such as written documentation, reports and photographs, to the National Park Service. (See *NPS Museum Handbook* Part III, Fig 3.4: Assignment of Copyright by Contractor).
- The Contractor may keep a copy of each image. The Contractor shall obtain written permission from the park superintendent or curator to use the image in a publication. When the Contractor uses an image, the credit line shall include the following: "Courtesy of the National Park Service," Park Name, Object Name, Catalog Number, Object Date,

Figure 8.3. Sample Insurance and Copyright Requirements for Inclusion in a Contract

SAMPLE OBJECT EXAMINATION REPORT

Owner:	National Park Service	Park Name:	Washington Support Office
Object:	Frock coat	Catalog No:	WASO1

Conservator:	Lesley Jones	Date Examined:	June 13, 2011
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Supervisor/COTR: Bob Smith

Overall assessment: Treatment required to exhibit/loan or stabilize condition
 Suitable for exhibit/loan or stable for long-term storage

DESCRIPTION:

The object is a single-breasted Civil War frock coat of navy blue doeskin (fulled wool) with a standing collar and long cuffed sleeves. The coat has a nine-button center front closure. It is fully lined—the body and skirt with green wool and the sleeves with natural colored twill weave cotton. There is a belt tab on the proper right (PR) side at the waist and an inner breast pocket on the proper left (PL) side of the coat. The 2.4 cm (7/8 inch) diameter brass buttons depict an eagle with a shield. The eagle holds an olive branch in his PL talons and a shaft of arrows in his PR talons; he faces to the right. Two of the same buttons adorn the back vent of the skirt at the waist; each sleeve cuff contains three smaller diameter buttons—1.5 cm (1/2 inch)—with the same eagle and shield design. The buttons have a maker's mark on the back "HORSTMANN & CO / NY & PHI." Shoulder boards of navy blue wool with sheet brass stamped to resemble gold bullion embellish both shoulders.

Dimensions:

Length: 98.9 cm (39 inches) (measured at the center back from the top of the collar to the bottom edge)
Width: 53.4 cm (21 inches) (measured at the widest point across the shoulders)

Structure or Construction:

This coat is a well-made, hand tailored garment constructed of high quality piece goods. The doeskin is fine. This coat does not have bound buttonholes. The collar is lined in black velvet.

The back is constructed in four pieces with a center back seam and two princess seams. Each front section is a single piece with a dart extending up 14.1 cm (5-1/2 inches) from the waist seam. The sleeves are constructed of two pieces with an added cuff that measures 6.5 cm (2-1/2 inches) in width. The skirt is constructed of two main pieces with small additional pieces used to form the vent in the center back. The entire coat is lined—the body and skirt with green wool and the sleeves with natural colored twill weave cotton. The inside front panels are quilted; the quilting extends under the arms to the princess seams.

Figure 8.4. Sample Object Examination Report

CONDITION:

Overall condition: Good Fair Poor Fragmented or disfigured Other

The coat is in excellent structural and aesthetic condition.

The shoulder guards are very heavy and may not be entirely original. The sheet brass appears to be attached to navy wool, which in turn has been stitched to what may be a modern, black fabric. This final layer is what has been stitched to the shoulders of the coat.

There are several small holes, a result of insect damage, scattered across the surface of the coat; they do not compromise the coat's structural integrity. There is a hole the size of a nickel in the center back along the bottom edge and slightly smaller holes on both sleeves at the elbows. There is a 1.3 cm (½ inch) tear at the PL sleeve seam in the back. The center front edge is unstitched along much of its length on both sides.

The lining is in excellent condition. There is one hole in the lining in the area of the inner breast pocket. The collar lining has come unstitched at the center back.

Physical damage:

- Structurally unstable
- Fragmented
- Distorted/bent/warped
- Cracked/split/torn/loose
- Brittle/desiccated
- Wet/damp/mold
- Waterlogged
- Flaking/friable surface
- Scratched/abraded

- Fire or smoke damage
- Accretions
- [...] Insect damage/traces
- Other (_____)

Chemical damage:

- Corrosion (active / inactive)
- Sweating/weeping
- Light damage or fading
- Stains or discoloration
- Crystalline deposits
- Oxidation
- Other (_____)

Previous treatment and historic evidence:

- Previous repairs/restorations
- Historic deposits/soiling
- Other (_____)

Biological damage:

- Insect damage
- Mold/fungi
- Rot
- Other (_____)

PREVIOUS REPAIRS, TREATMENT, MOUNTING:

Some buttons may have been re sewn. Aside from the difference in thread used, it is possible to tell the difference between original and re sewn buttons because the original buttons were sewn on before the facing was attached. As a result, the stitching does not extend through all layers and is not seen on the inside. In contrast, the stitching on re sewn buttons extends through all layers and can be seen on the inner face of the coat. Components of the shoulder boards may have been replaced.

PHOTOGRAPHIC DOCUMENTATION:

None

Figure 8.4. Sample Object Examination Report (continued)

OBJECT TREATMENT PROPOSAL

Owner: National Park Service **Park Name:** Washington Support Office

Object: Frock coat **Catalog No:** WASO1

Conservator: Lesley Jones **Date Proposed:** July 2, 2011

Supervisor/COTR: Bob Smith **Estimated Time:** 75 hours

Estimated Cost: \$7,500 (\$100/hr)

DESCRIPTION AND CONDITION:

See Object Examination Report dated June 13, 2011.

PROPOSED TREATMENT:

1. Vacuum-clean coat using reduced suction.
2. Visually reintegrate areas of loss using compatible weight and color fabric to back holes.
3. Clean buttons and apply protective coating of microcrystalline wax.
4. Re-stitch seams requiring stitching; reinforce with Stabiltex polyester multifilament fabric as needed.
5. Examine shoulder guards. Because of their weight, explore mounting options besides stitching them to shoulder of coat.
6. Prepare custom-built mannequin on which to display coat when on exhibit.

DOCUMENTATION:

Before and after treatment high resolution color TIFF digital files and 2x3 negative film images will be taken of the object.

Figure 8.5. Sample Object Treatment Proposal

RECOMMENDATIONS FOR SUBSEQUENT CARE:

DISPLAY REQUIREMENTS:

- Light levels should not exceed 5 lux (5 foot-candles) using a Visitor Activated lighting system.
- The coat should be inspected annually for signs of pest infestation.
- The coat should be micro vacuumed while on exhibit as required. Vacuuming frequency should be determined by inspecting the textile and noting the accumulation of dust inside the exhibit case.
- The coat should be rotated off display in 2 to 3 years and allowed to remain in storage for at least 5 years before being exhibited again.

POST EXHIBITION CARE:

The coat should remain in storage, in a dark, clean, stable environment for at least 5 years after rotation. See *NPS Museum Handbook* Part I, Appendix K (Curatorial Care of Textile Objects) for preventive conservation, handling and storage procedures.

If you agree with this proposal, please sign it and return it to the conservator. Your approval of this request must be received before work can proceed. The conservator will be happy to discuss this treatment proposal with you and answer any questions. If significant changes to this proposal are anticipated once treatment has begun, the conservator will consult with you.

Prepared by: _____ Date: _____
Title: Conservator

Approved by: _____ Date: _____
Title: Curator

Concurred by: _____ Date: _____
Title: Superintendent

Figure 8.5. Sample Object Treatment Proposal (continued)

OBJECT TREATMENT REPORT

Owner: National Park Service **Park Name:** Washington Support Office

Object: Frock coat **Catalog No:** WASO1

Conservator: Lesley Jones **Date Proposed:** October 24, 2011

Supervisor/COTR: Bob Smith **Treatment Time:** 73 hours

DESCRIPTION:

See Object Examination Report dated June 13, 2011.

CONDITION AND TREATMENT PROPOSAL:

See Object Treatment Proposal dated July 2, 2011.

TREATMENT:

Several small holes scattered across the surface of the coat, a result of insect damage, as well as the insect or rodent damage evident along the bottom edge of the coat in the center front, were repaired using patches of a compatible blue wool fabric placed behind the holes and secured with stitching using a thread pulled from Stabiltex, a polyester multifilament fabric. The buttons were cleaned and degreased with Stoddard solvent and a protective coating of microcrystalline wax was applied using cotton swabs. Stitching securing seams of the coat and lining that had failed in numerous areas was replaced using a thread pulled from Stabiltex. A custom mannequin was built on which to display the coat when on exhibit. Once the coat was fit on the mannequin, it was vacuumed using reduced suction.

The shoulder bars were removed from the coat and gently reshaped to better fit the shoulders of the coat. To prevent further damage to the coat, a Velcro hook was sewn to a support fabric and the fabric was sewn to shoulders of the coat with a black cotton thread, 3 S plied Z. A strip of Velcro fabric was sewn to the underside of the shoulder bars. The Velcro hook attaches to Velcro fabric securing the shoulder bars in place.

PHOTOGRAPHS:

Before: Yes
During: No
After: Yes
Type Film: High resolution TIFF files and 2x3 negative film

SUPPORTING DOCUMENTATION:

Fiber Analysis: No

Figure 8.6. Sample Object Treatment Report

Chapter 8: Conservation Treatment

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RECOMMENDATIONS FOR SUBSEQUENT CARE:

DISPLAY REQUIREMENTS:

- Light levels should not exceed 30 lux (3 foot-candles) using a visitor activated lighting system.
- The coat should be inspected annually for signs of pest infestation.
- The coat should be micro vacuumed while on exhibit as required. Vacuuming frequency should be determined by inspecting the textile and noting the accumulation of dust inside the exhibit case.
- The coat should be rotated off display in 2 to 3 years and allowed to remain in storage for at least 5 years before being exhibited again.

POST EXHIBITION CARE:

The coat should remain in storage, in a dark, clean, stable environment for at least 5 years after rotation. See NPS *Museum Handbook* Part I, Appendix K (Curatorial Care of Textile Objects) for preventive conservation, handling and storage procedures.

Notes:

Fuller wool was a British specialty. After the cloth was woven, removed from the loom, and scoured to remove the oils used in the spinning process, fulling occurred to both felt the cloth and shrink it. Fulling was done in a fulling mill using wooden hammers or stocks to raise the nap. The cloth was first scoured with the slow motion of hammers, "leisurely without such violence as heats it much;"¹ fulling was then done with "quick heavy strokes which heat the cloth and shrink the fiber"² using an *aena*, a flat wooden implement set with spikes. In some cases the woven cloth was burlled before being fullled but after being scoured. Fuller's earth in soft water was used as a detergent in the scouring process; if Fuller's earth was not available, sig (stale urine) or swine's dung was employed instead. The scouring agent needed to be alkaline; sig provided a natural source of ammonia.

The main problem in fulling was ensuring that the textile shrank evenly. "Fine medley broadcloth made in the early eighteenth century shrank less than half its width and one-third its length." Shrinkage was proportional to the texture of the cloth and the length of the fulling process; the thinner the cloth, the less the shrinkage. Well-woven Wiltshire medleys of the eighteenth century could be finished in nine hours; the process was lengthened considerably for badly woven cloth. The degree of fulling varied by location —Gloucestershire cloth tended to be more heavily fullled.

Cloth was easily damaged during the fulling process. After emerging from the fulling mill, the cloth was hung on tenters to dry; the tenters served to stretch the wet fabric. The fulling process sometimes left the sides of the cloth longer than the middle section. Gloucestershire led in the mechanization of scouring; Wiltshire led in the mechanization of fulling. The first patent for a fulling machine was obtained in 1833; by the mid-19th century the fulling process was fully mechanized.

¹Jenkins, J. Geraint ed. *The Wool Textile Industry in Great Britain*. London: Routledge & Kegan Paul, 1972.

²Mann, J. de L. *The Cloth Industry in the West of England from 1640 to 1880*. Oxford: Clarendon Press, 1971.

Figure 8.6. Sample Object Treatment Report (continued)