

Recovering Wet Materials: Disaster Plans and Recovery Workflows

Joshua M. Lupkin
Tulane University, jlupkin@tulane.edu

Sally Krash
Tulane University, skrash@tulane.edu

Eric Wedig
Tulane University, wedig@tulane.edu

Follow this and additional works at: <http://docs.lib.purdue.edu/charleston>

 Part of the [Library and Information Science Commons](#)

An indexed, print copy of the Proceedings is also available for purchase at: <http://www.thepress.purdue.edu/series/charleston>.

You may also be interested in the new series, Charleston Insights in Library, Archival, and Information Sciences. Find out more at: <http://www.thepress.purdue.edu/series/charleston-insights-library-archival-and-information-sciences>.

Joshua M. Lupkin, Sally Krash, and Eric Wedig, "Recovering Wet Materials: Disaster Plans and Recovery Workflows" (2014).
Proceedings of the Charleston Library Conference.
<http://dx.doi.org/10.5703/1288284315601>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

Recovering Wet Materials: Disaster Plans and Recovery Workflows

Joshua Lupkin, Chief Bibliographer for the Humanities, Howard-Tilton Memorial Library, Tulane University

Sally Krash, Head of Acquisitions, Howard-Tilton Memorial Library, Tulane University

Eric Wedig, Chief Bibliographer for the Social Sciences, Howard-Tilton Memorial Library, Tulane University

Abstract

Careful documentation of collections and disaster planning can allow a library to recover physical collections after events with the best possible outcomes for condition, materials costs, outreach, and librarian/staff workflows. This paper describes how the Howard-Tilton Library at Tulane University (HTML) experienced a roof leak in February 2014 with attending need to manage the outsourced work of disaster recovery contractors for the remediation of more than 2,000 wet books, the reshelving of more than 20,000 displaced books, and the replacement of about 300 books within a two month period during the academic year. This paper describes successful methods of response, workflow considerations, and adaptations, as well as lessons learned. The paper concludes with recommendations about disaster policy implementation and includes an appendix with updated resources and a link to Tulane's revised policy.

The Precipitating Incident: How It All Began

Tulane received national attention for its response to catastrophic flooding and attendant collections losses in the aftermath of Hurricane Katrina in 2005 (Corrigan, 2010). Other recent incidents of large although still lesser scale have occurred, such as at Colorado State University in 1997 and University of Iowa in 2008 (Lunde & Smith, 2009). This paper pertains to a smaller disaster that may be more common or likely. Many libraries have aging infrastructure or periodically undertake renovation projects that can allow smaller but still serious floods of vulnerable collections.

Since October 2013, Howard-Tilton Memorial Library (hereafter HTML) had been in the midst of a construction project in which two floors were being erected above the existing floors of HTML. This build-back and hazard mitigation program was funded by the Federal Management Agency (FEMA) and through a long and heavily regulated process. The two floors being added above the existing four stories were meant to replace spaces destroyed after Hurricane Katrina in the basement of the library main building and in the basement of a neighboring library building for special collections (Corrigan, 2014).

A single mistake in the construction process, combined with the heavy precipitation characteristic of the Gulf Coast, left open the door to major damage. During the very early morning of February 21, 2014, water came into building through the roof above a top floor office where a cement subcontractor had been installing rebar into the existing concrete roof. The source of the problem, beyond a significant amount of rain, was apparently two holes mistakenly driven all the way through the roof. Matters were made worse by the fact that the rainfall on the roof was channeled to the very area where the holes were located, thereby forming a pool just above the holes. What stemmed the flow was the ending of the downpour and the mobilization of the university's Facilities Services staff onto the roof to cover the holes with a tarp. The holes were subsequently plugged and the subcontractor responsible for the holes was dismissed from the project.

Inside the building, the picture was hectic during the flood. Sometime after midnight, a student reported water coming through the roof during the rain storm. Facilities Services, the Tulane University Police Department and the Dean of Libraries were contacted by evening access service managers. The Dean arrived around 1:10

a.m. to find water pouring heavily through the roof at the northeast corner of the 4th floor. Students and staff in the building at the time responded to a public call to assist in the removal of books from the areas directly affected by the incoming water onto dry floor areas, forming human chains. Books on lower shelves elsewhere on the floor, though not wet, were also removed in order to allow the raising of the base of the shelves for proper drying of the carpet later.

The primary construction contractor hired a local recovery service to take initial steps to remove the water and dry the carpets. HTML staff, custodial staff, and Facilities Services cooperated to transfer wet and damp books to the basement. Thousands of dry books thought to be in harm's way near the wet areas of the floor were also transported to the basement. Under the direction of HTML's preservation librarian, HTML staff took appropriate measures to limit subsequent damage to the wet and damp materials.

The basement is a large 40,000 square space that was destroyed after Katrina and at the time of the 2014 roof leak was still gutted and unfinished. It provided a useful space to temporarily stage all the affected materials.

While roughly three double-sided ranges (6 sections each) experienced moisture from the roof, the wet book damage extended to other books handled in a sense of urgency and to their placement on floor areas that went from dry to moist as the volume of water increased. The very slight slope of the floor, which led water to accumulate most in areas at slight remove from the stacks, limited the damage from being more severe. At this stage, disaster management revolved around two classes of books: dry (<20,000) and wet (2500). After proper assessment of condition, 2200 were later determined to be salvageable and 300 unsalvageable.

The Initial Response

The initial response, including immediate onsite condition review and triage and collaboration with the recovery contractor, was crucial for moving forward with recovery in a timely way. Quick

identification of the number and character of books requiring replacement allowed staff in collections and technical services to begin the process of assessing value, requesting appropriate replacement funds, and beginning to source replacements.

On the morning after the leak, many senior staff went immediately to the affected floor to survey the damage. Many people had already been working for hours, engaged in gathering up the books and placing them on book carts so that they could be transported to a location (to be determined) in the building for review of their condition. HTML was fortunate to have large carts on hand from a moving company the library had contracted with to move books in another area of the building. It was quickly determined that the unoccupied and access-restricted basement of HTML was the best place for this review. Library staff transported materials to the basement and distributed them to tables based on their condition. Staff from Technical Services and Circulation worked under the direction of stacks management and the preservation librarian. Timely identification of essential supplies, including carts, tables, and dehumidifiers, greatly speeded this work.

An impromptu triage area in the basement, furnished with tables drawn from elsewhere in the library and on hand for public events, allowed the condition of 4th floor books to be reviewed. Most books were general history, medieval history, and history of the British Isles, in call number ranges D-DA 900s. HTML's preservation librarian organized an initial assessment of all of the books from the 4th floor affected area.

HTML Technical Services librarians, in particular the heads of the Library's Cataloging and Database Management units, worked with the preservation librarian to scan barcodes from most of the reviewed books and create a master list of all damaged books. The Library's Information Technology staff added a new category in the system admin module to reflect the changed location. Some books did not have barcodes and the technical services staff was able to manually add these books to the master list. The list of barcodes improved outcomes in a number of

ways, as it allowed a timely update of the catalog to reflect the status of the items and maximum transparency to library users.

Books were initially identified as being either wet or dry, and then assessed for the type of damage incurred. They were placed in three categories: wet coated paper (to be replaced), wet uncoated paper, and dry (to be returned to shelf). Of greatest concern to those engaged in book triage were the volumes containing coated paper and glossy prints. While replacement was preferable to salvage in these cases, HTML could not dispose of them prior to working with the insurance adjuster on replacement funding. Ultimately, a number of books were identified as being a total loss, either too damaged to even be opened or containing unrecognizable photographs and prints. Many of books with damaged prints or photographs were books on the history of the British Isles, often documenting archaeological sites.

Initial Outsourcing and Communication Considerations

Tulane's familiarity with outsourcing damaged books informed crucial early responses. After Katrina, HTML had in its main building alone more than 700,000 individual print volumes and recordings submerged underwater, as were nearly 1.5 million individual pieces of microform such as microfilm reels and microfiche cards. In an adjacent building for special collections, 700,000 or so manuscript folders and other archival items also needed to be salvaged. A large disaster management firm called BELFOR was called to the scene within days for early reconnaissance, as part of Tulane's campus-wide emergency plan. Eventually BELFOR handled the salvage, building climate stabilization, and collections remediation tasks for the library as well as the University as a whole. One of the primary lessons the library learned from Katrina was that disaster management and remediation is its own profession with methods, techniques, and equipment that are continually evolving. Therefore in the event of real disasters it can be best to rely on qualified outside expertise. Moreover, extensive labor is required to acquire

and catalog replacement items or to process restored items for their return to the shelves, generally more extra labor than libraries have on hand. After Katrina, these tasks were outsourced as well, with labor brought in to the Library's temporary Recovery Center that also provided for the temporary storage of recovered materials until destroyed library spaces could be built. These operations were funded through a complex mixture of federal disaster assistance programs and the University's emergency recovery funds gathered from insurance, donations, and other sources. Eventually the Recovery Center processed more than 1 million physical items requiring restoration or replacement.

In the case of the smaller roof leak in 2014, the library still needed to organize a recovery funding and billing protocol and arrange for expert building remediation, professional treatment of wet materials, and outsourced labor for materials handling processing. This was handled by the Library's Associate Dean, who had overseen the Library's recovery planning and operations after Katrina. In this instance he worked closely with Tulane's Office of Risk Management, Department of Capital Projects & Real Estate, Facilities Services, Office of Environmental Health and Safety, the construction contractor, and insurance representatives. On the morning after the leak, the Office of Risk Management agreed to provide initial funds to bring in a qualified disaster firm. Although BELFOR was used in Katrina, engaged the services of by then a different company, BMS-CAT, with which it had a standing contract for these types of events. BMS-CAT responded relatively quickly to take over the drying and remediation of both the affected library space and its wet materials.

Within a few days all parties had agreed to allow BMS-CAT to ship the wet materials to a treatment facility in Texas and to provide funds for the library to hire an outside service provider to eventually process the returning restored materials. The service provider, LAC Group, had been used by the library to staff its Recovery Center post-Katrina. Handling and processing in this case included the reshelving of what turned out to be more than 20,000 dry books that had

been pulled from lower shelves to assist with drying wet carpet underneath.

The Library's Recovery Center was still in operation at the time, with LAC Group staff finishing up the last of its Katrina recovery-related projects. In a long-established routine, books dried by the remediation vendor (in this case BMS-CAT) were returned for processing to the Recovery Center located at the Library's off-site storage facility off-campus, before they were eventually returned to their original shelves.

The thousands of dry books that had been moved from harm's way to the basement were reshelfed in the 4th floor stacks area within eight days. This work was outsourced to the LAC Group and the library's Stacks Management Department supervised the work. Also, the faculty of several academic departments at Tulane (History, Political Science, Art and Anthropology) was informed about the actions taken by the library, and kept up to date as to the condition of the damaged books and when the dry books would be reshelfed. In retrospect this was a very important step; keeping faculty members informed allowed them to work with their students, adjusting assignments related to the books in the affected area.

Ultimately 2,200 wet books were identified as needing restoration. These books were in usable condition, but needed to be stabilized and dried. These books were transported by BMS/CAT to their facility in Texas for drying and were ready to be returned to HTML by the end of March. It was determined that an additional 300 (mostly coated paper) books needed to be replaced. It would be the job of the Howard-Tilton Acquisitions staff to locate replacement copies. It was unclear if all, or a majority, could be replaced.

Replacing the Materials

While the disaster response effort involved many areas of HTML staff in some manner, technical services regarded the organization of collection recovery workflows in an acute manner. Technical Services Division managers, including those in Acquisitions, Cataloging, Database Management (DBM), and Stacks Maintenance, met to evaluate

the scope of recovery activities' impact and to evaluate the capacity of current departments to handle recovery-related activities. Managers who had been involved in recovery efforts after Hurricane Katrina provided insight into what had worked well and what had not worked well with recovery from that disaster event. LAC Group, which was used for that recovery effort, was still being used for a subsequent cataloging/records management project. Since the company had an established fiduciary relationship with Tulane University as well as experience with our collections and local technical services processes, it was a logical choice for this recovery effort.

Of direct impact on Technical Services were pressing questions about the very logistics and budgets of moving collections and assigning funds for replacements. As the books were lying in piles on tables in the basement, librarians had to ask vital questions in order to determine appropriate staffing needs and the attendant costs. Vital to this process was determining the number of books that were salvageable and the number that needed to be replaced. There was an initial estimate of 300 unsalvageable volumes, later including 94 volumes rejected after return from remediation, among 166 boxes of wet materials (approximately 2200 books). There were also 70 book trucks (approximately 30,000 books) with dry/undamaged books that needed to be brought back to shelves as soon as possible after the carpet dried.

Collections recovery presented important fiscal questions as well. While the construction contractor was insured for losses of this type, funds needed to be made available in the short term and before such claims were negotiated. Before substantial action could be taken, library managers needed to determine the source of funds for replacements and outsourcing and the timetable for receipt of these funds.

In line with lessons learned from the far larger Katrina recovery effort, it was determined that third-party disaster remediation firms and library service providers should play the primary role in every stage of collections recovery where the use of library staff would not have been possible or

would have diverted staff from important normal work flows.

Departmental Workflows

Technical services departments needed to resolve questions of who could be involved in recovery efforts and to what extent they could handle increased activities. Different units had slightly varying latitude in their workflows. For some departments, the added work required a determination of whether outsourcing could be funded and whether a trusted contractor could be engaged to do the work.

Activities of the Library's Preservation Librarian, a member of the Technical Services division, have been mentioned earlier. As she was leading hands-on activities directly related to affected materials, the Associate Dean was working with other Tulane administrative departments in quickly identifying vendors who could be used in recovery efforts, and procedures and responsibilities for who in which university department would approve which kinds of expenses and handle and monitor billing and payments. He quickly got permission to use outsourced labor for reshelving dry materials.

At the time of the 2014 flood event, Stacks Management was actively involved in shifting materials in response to construction occurring in the building. This was in addition to regular shelving activities. The staff of four was not able to handle the increased workload involved in handling the more than 20,000 dry/undamaged books. The recovery contractor was used for this effort.

Acquisitions reviewed the kinds of materials (mostly books with some serials volumes) and dates of publication (1839–2013) to determine if replacement ordering could be done in-house in the midst of ongoing activities and commitments. In February, the acquisitions staff was already heavily involved in ordering processes after the cyclical 60% spend-down effort of funds, meaning that bibliographers are required to have 60% of their funds spent by the first week of February. Also considered was the department's wish not to repeat the recent experience of having corrected

over 10,000 records that were not properly handled after Katrina recovery, very specifically related to fund management and receiving. In the end, it was determined that replacement workflows would easily fit into current activities of the department and its complement of seven. Acquisitions staff handled replacement processes.

Cataloging and Database Management, in contrast, were not prepared to handle increased workloads in managing records related to books involved in the disaster, cataloging replacement materials, and physical processing of remediated and replacement materials. Although staff in these departments totaled 20, they were working through backlogs, a legacy project, and ongoing cataloging and records management of newly acquired materials. As such, employees of our Katrina recovery vendor were used for all outsourced activities except salvaging.

The end results were that the Library outsourced the reshelving of dry books and the remediation of 2200 books. A small group of the remediated volumes (94) were rejected as unacceptable and the list of additional titles was sent to Acquisitions for replacement processing. Acquisitions replaced a total of 390 volumes that were lost in this flood event, at an average of \$48.70 per title. The initial replacement effort included 277 volumes, augmented by the volumes rejected after remediation. Among the 20 volumes that presented the most difficulty, only one—a serial volume from the 1970s—was never found. Most replacements were for British imprints and were found through Amazon and ABE in the US, Canada, and the UK. Acquisitions staff also had to contact societies and book vendors in the UK to obtain hard-to-find materials. This process led to important insights about the capacities and concerns of various vendors. Barter Books in the UK was the most helpful, as they were very responsive to queries about materials that were not included in their online bookshop. The biggest disappointment was in using ABE books, which presented issues with receiving and condition of materials. The materials most challenging to replace were those from the 1960s and 1970s.

It is worthwhile to note that prior to this event, disaster kits had been strategically located

throughout the library building. Those kits included plastic sheeting which could have been used to cover bookshelves as an alternative to moving books from the shelves. It was clear that the library needed to address more clearly best practices in its disaster plan and reinforce this with training across the organization. The Preservation Librarian has since created a detailed disaster recovery plan that is now in place, and has provided training across the library.

Detailed workflows can be found at http://tulst.pbworks.com/w/page/76901795/Recovery_and_Remediation_2014.

Lessons Learned and Concluding Thoughts

While there is no shortage of vetted information available about best practices (Wilkinson, 2010; Wellheiser, 2002; Todaro, 2009; Wessely, 2010), the larger task for libraries may be to extend familiarity about such best practices and individual responsibilities to all of the different parts of the library that may be involved. Especially important in the case at hand was for such training to extend to new hires and those staffing the building on evenings/weekends.

Tulane's own experience after Katrina had suggested three primary lessons: having an effective means of communication after an event; relying on a qualified external disaster management firm and not overburdening normal workflows more than absolutely needed; and establishing liability beforehand as far as possible (Corrigan, 2010, p. 126).

The experience in 2014 suggested that our team benefited from these lessons. Once recovery began, we did communicate well with campus stakeholders and among ourselves. Our University had an established relationship with external contractors for book drying as well as sorting and reshelving, who were poised to act efficiently and with comparatively minimal diversion of regular staff duties. However, the University chose to use a different vendor for remediation efforts. In the end, all but one of the 2500 wet books was successfully restored or replaced within three months and procedures put into place that prevented a repetition of such water incursion.

Not everything was perfect, however. It was not enough simply to have a good disaster plan in place; rather, it is necessary to make sure that there is widespread training among all staff about its details and their personal role in the bigger picture. Although the contribution by building users in removing books from perceived harm speaks highly of public spiritedness on our campus, current plans more clearly state that the best practice would have been to leave affected books in place on shelves under readily available plastic sheeting until being removed by experienced contractors.

It would have been difficult for the Library to have done more to anticipate or prevent the water incursion. Despite careful oversight of the process by the University, the process of doing such fundamental construction on a continuously occupied building presented a consistent give-and-take between the interests of the contractors and subcontractors for speed and efficiency, and those of the Library for collections integrity and minimal disruption to building users. The event was a stark example of the construction project's complexity and low margin for error. One part of the Library also on the same floor, the special collections unit of the Latin American Library, had earlier relocated its rare materials in order to avoid the chance of damaging them. However, it would not have been possible to move all the collections housed on the 4th floor. After the incident, steps were taken to make sure that all potentially sensitive construction work above had multiple checks by more parties each day before the work site was vacated.

Wet books are not a new phenomenon for academic libraries, and many libraries have disaster plans on file, but the experience of the team at Tulane suggests the need for constant vigilance and training. Even at a time when many libraries are reevaluating the investment of staff and space for the maintenance of physical collections in their facilities, it remains highly relevant to devise and to raise awareness of plans to protect and recover their investments. It is beyond the scope of this presentation to discuss the distinct but equally pressing issues of response to "disaster" threats to digital

collections, though there are some essential commonalities in principle (Breeding, 2012).

References

- Breeding, M. (2012). From disaster recovery to digital preservation. *Computers in Libraries*, 32(4), 22–25.
- Corrigan, A. (2010). Case 3: Hurricane Katrina. In Wilkinson F. C., Lewis, L. K., & Dennis, N. K., *Comprehensive guide to emergency preparedness and disaster recovery* (pp. 117–127). Chicago: Association of College and Research Libraries.
- Corrigan, A. (2014, March 31). Howard-Tilton Memorial Library build-back and hazard mitigation project: 4th floor update: Remediation and construction progress. Retrieved from <http://html-addition.blogspot.com/2014/03/4th-floor-update-remediation-and.html>
- Lunde, D. B., & Smith, P. A. (2009). Disaster and security: Colorado State style. *Library & Archival Security*, 22(2), 99–114. <http://dx.doi.org/10.1080/01960070902869766>
- Todaro, J. B. (2009). *Emergency preparedness for libraries*. Lanham, MD: Government Institutes.
- Wellheiser, J. G. (2002). *An ounce of prevention: Integrated disaster planning for archives, libraries, and record centres* (2nd ed.). Lanham, MD: Scarecrow Press.
- Wessely, T. (2010). Preparing for the end of the world: Are you ready for a library disaster? *Access* (10300155), 24(2), 26–29.
- Wilkinson, F. C. (2010). *Comprehensive guide to emergency preparedness and disaster recovery*. Chicago: Association of College and Research Libraries.

Appendix

Disaster Planning and Preservation Links

Public version of Howard-Tilton Memorial Library at Tulane University disaster plan
http://library.tulane.edu/sites/library.tulane.edu/files/documents/2014HTMLplan_public.pdf

The below lists are not exhaustive, but are meant as a starting point for researching and working on disaster preparedness at your institution.

All links below are also at <http://libguides.tulane.edu/preservation>

Tools and Resources for Disaster Preparedness

dPlan: “A free online tool that will help you simplify the process of writing a disaster plan. Enter information about your institution using the comprehensive fill-in-the-blank template. This template will guide you through the steps necessary for effective disaster planning.”
<http://www.dplan.org/>

Council of State Archivists (CoSA) Framework for Emergency Preparedness
<http://www.statearchivists.org/prepare/framework/index.htm>

Pocket Response plan (PREP): “A concise document for recording essential information needed by staff in case of a disaster.”
<http://www.statearchivists.org/prepare/framework/prep.htm>

American Library Association (ALA) Disaster Preparedness and Recovery
<http://www.ala.org/advocacy/govinfo/disasterpreparedness>

National Archives and Records Administration recovery and salvage vendor list
<http://www.archives.gov/preservation/disaster-response/vendors.html>

Amigos Library Services, “A Disaster Plan for Libraries and Archives”
“Designed to assist libraries and archives in preparing for emergency situations which may threaten the safety of persons, collections and facilities.”
<http://www.amigos.org/preservation/disasterplan.pdf>

Connecting to Collections online course “Risk Evaluation: First Step in Disaster Planning” recordings available at <http://www.connectingtocollections.org/courses/risk-evaluation/>

Connecting to Collections online course “Protecting Your Collections: Writing a Disaster Response Plan” recordings available at <http://www.connectingtocollections.org/courses/writing-a-disaster-plan/>

California Preservation Program, library disaster plan template
http://calpreservation.org/wp-content/uploads/2013/05/CPTF_disaster_plan_2003.pdf

Getty Conservation Institute, “Building an Emergency Plan: A Guide for Museums and Other Cultural Institutions”
http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/emergency_plan.pdf

Salvage Instructions

National Parks Service Conserve O Grams: Disaster Response and Recovery

http://www.nps.gov/museum/publications/consveogram/cons_toc.html#collectionpreservation

National Archives and Records Administration (NARA) Salvage Procedures

<http://www.archives.gov/preservation/disaster-response/salvage-procedures.html>

Northeast Document Conservation Center (NEDCC) Leaflets: Emergency Management

<https://www.nedcc.org/free-resources/preservation-leaflets/overview>

Association of Moving Image Archivists (AMIA), "Disaster Recovery for Films in Flooded Areas"

http://www.amianet.org/sites/all/files/Resource_Recovery_for_films_in_flooded_areas.pdf

AMIA, "Disaster Recovery for Tapes in Flooded Areas"

<http://www.amianet.org/sites/all/files/Disaster%20Recovery%20for%20Tapes%20in%20Flooded%20Areas%20by%20Peter%20Brothers.pdf>

Minnesota Historical Society Salvage Procedures for Wet Items

<http://www.mnhs.org/preserve/conservation/emergency.php>

Library of Congress, "What To Do If Collections Get Wet"

<http://www.loc.gov/preservation/emergprep/dry.html>

Sample Disaster Plans

Syracuse University Library Disaster Recovery Manual

<https://library.syr.edu/about/departments/preservation/PDF/SULDisasterManual.pdf>

University of Michigan Library Disaster Response & Recovery Plan for Library Collections

<http://www.lib.umich.edu/preservation-and-conservation/university-library-emergency-response>

Columbia University Libraries Disaster Response Manual for Care of Library Materials (2008 ed.)

https://library.columbia.edu/content/dam/librarywebsecure/behind_the_scenes/preservation/disaster-2008-edition.pdf

University of Washington Libraries Disaster Response Plan for Library Collections

<https://www.lib.washington.edu/preservation/disaster/unit-plan>