

Institute of Museum and Library Services (IMLS) National Museum Survey (NMS) Pilot: A Summary Report

JANUARY 2024

Highlights

- **Paving the Way for a Statistically Valid Annual Collection:** The NMS pilot marks a significant step toward the establishment of a statistically valid annual collection launching in early 2025.
- **Identification of Potential NMS-Eligible Museums:** The NMS pilot identified approximately 20,000 museums that might be eligible for inclusion in the NMS.
- **Informed by Over a Decade of IMLS Efforts:** The NMS pilot is the culmination of efforts started in 2010 to develop standard data definitions and inventory of the nation's museums.
- **Three Years of Intensive Research with Museum Input:** The survey was designed with input from [hundreds of the nation's museums](#) over three years of intensive research.
- **Comprehensive Questionnaire Coverage:** The questionnaire¹ covers the material most valued by museums.
- **Ease of Completion and Minimal Time Requirement:** NMS pilot respondents said that completing the survey was easy and that it didn't take much of their time.
- **Strengthening the NMS Contact List:** The pilot results indicate that IMLS's contact list needs to be strengthened. Recognizing this, the agency will reach out to the field in 2024.

IMLS' National Museum Survey Pilot

The museum sector is particularly challenging to study due to its inclusion of museums of greatly varied types. What does a small historical society museum have in common with a huge aquarium, and how can each be reliably contacted? Only by having all corners of the field represented in one study will we be able to understand the scope and scale of the entire sector.

Despite these challenges, IMLS has sought to answer calls for a reliable annual national collection for more than a decade. These efforts intensified when the museum field acutely felt the absence of such a resource during the COVID-19 pandemic, which forced many museums to close their doors or change their offerings to the American communities they anchor.

IMLS redoubled its efforts to develop a national survey of the country's museums beginning in 2020. This work incorporated the continuous feedback of a group of leading museum executives and researchers. Additionally,

Who's included in the NMS?

The NMS seeks feedback from botanical gardens, arboretums, nature centers, zoos, aquariums, science and technology centers/museums, planetariums, history museums, historic sites, art museums, children's museums, natural history museums, anthropology museums, and general or specialized museums.

¹ Throughout this report, "questionnaire" refers to the set of questions posed to museums to gather their data. Meanwhile, "survey" is a broader term that includes the questionnaire, as well as other elements of the project such as solicitation materials and the online data collection platform.

it drew insights from hundreds of museum administrators who participated in preliminary research and 7,050 museums that were invited to take part in a pilot NMS.²

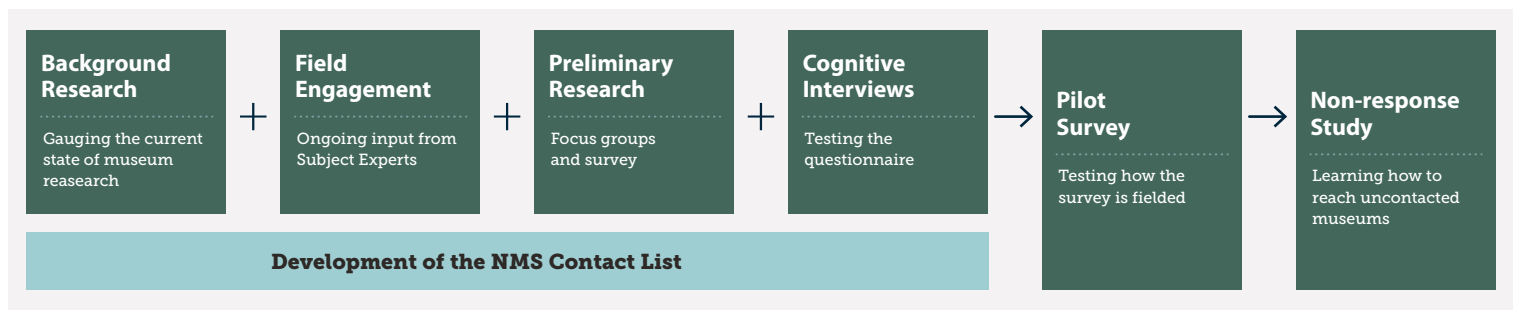
The lessons learned from this effort represent a critical step toward implementing the nation's first statistically valid annual survey of the country's museum sector beginning in early 2025.

Developing the NMS Pilot

The NMS pilot's development and administration was based on a comprehensive, methodical process designed to incorporate extensive feedback from the museum field at each step (**Exhibit 1**).³ IMLS designed the survey's questionnaire by incorporating feedback from the field to ensure that the survey requires minimal participation burden while including the

topics that museums indicated are most valuable. Concurrently, a new contact list was created representing a universe of about 20,000 museums nationally. The process also incorporated seven contact experiments aimed at testing multiple approaches to most effectively administering the survey to the museums identified.

Exhibit 1: NMS Pilot Development Process



Fostering Museum Engagement Is Key to the NMS's Success

The key premise driving IMLS's approach to designing the NMS was that continuous field engagement is vital to driving museums' participation and, ultimately, the project's long-term success. IMLS actively engaged the field through multiple activities ahead of and during the pilot. These activities included convening subject matter experts (SMEs); conducting preliminary surveys, interviews, and focus groups with museum administrators; and carrying out a national campaign to raise awareness about the pilot survey.

Engaging SMEs

IMLS gained valuable insights into the museum field's priorities and concerns through regular feedback from a group of trusted SMEs. Starting in October 2021, IMLS convened an SME panel⁴ of 13 experts to provide guidance and feedback on the design of the NMS pilot study and questionnaire development. The

SME panel included experts from museums, museum associations, and non-museum entities, including research centers, a nonprofit, and a federal agency.

The SME panel provided input on several design elements: the NMS vision statement, research questions, survey themes, survey population, survey preamble, and questionnaire item development. For example, SMEs provided valuable insights and input on the operational definition of museum. Additionally, the SME panel recommended using the term institutions instead of museums in the questionnaire to ensure inclusivity across all disciplines. This approach accommodates entities such as zoos and aquariums, which may not traditionally identify as "museums."⁵

IMLS plans to engage a panel of SMEs for each future annual NMS. The makeup of this group will reflect the varied sizes and types of museums. The use of alternate

²The NMS pilot was conducted during the summer of 2023. Out of the sample of 7,050 invited museums, about 17 percent responded. The results from the pilot are not generalizable to the entire population of museums, so this report does not present summary statistics of the survey responses.

³For more details about the development process, see the "Methodology: Pilot Design Through Administration" section.

⁴See the list of SMEs on page 8. Initially, there were 10 SMEs, but over time, the group grew to include 13.

⁵The questionnaire was revised to allow museums to select the term that "best represents how we should refer to your institution." NMS pilot respondents could select one of the following terms to describe their institution: museum, aquarium, center, garden, institution, organization, park, site, or zoo. The selected term was then filled into the survey questions displayed to the respondent.

or sub-panels composed of hard-to-reach museum types and sizes is being explored as a means for IMLS to more effectively reach and cater to these specific audiences. IMLS also intends to continue to include representation from a large group of museum associations⁶ for the annual NMS and to prioritize outreach efforts to smaller and harder-to-reach museums, such as zoos, and botanical gardens.

Preliminary Research Captured the Field's Preferences and Priorities

The NMS pilot used the SMEs' advice and insights to design and direct the project's preliminary research

Preliminary Research Participants

IMLS invited administrators of museums of various size and discipline to participate in preliminary research—a survey, focus groups, and interviews—to learn about the needs and challenges of the museum field and the NMS's potential respondents.

with hundreds of museum administrators. This research used the museum field's voice to guide all of the subsequent development work completed for the pilot.

The research conducted found that many of the surveys currently administered to the

museum field are perceived as challenging to complete. This difficulty stems from the overall complexity of the surveys and the phrasing of their individual questions. Additionally, the research found that the time and staff effort needed to answer the questions often posed a significant burden.

The agency discovered that museums' primary incentive to participate in the survey would be to gain free access to survey data and results tools. Museums specifically requested web-based peer comparison data tools, infographics for sharing with stakeholders and for advocacy, and short written reports tailored to each museum discipline and particular topics (e.g., governance structure, future plans).

IMLS will use this feedback to develop relevant and timely data tools, refine them with input from both the museum sector and SMEs, and then publicize their availability for survey respondents.

Through this research, participants recommended that IMLS partner with cultural and museum associations to promote the NMS pilot. With this guidance, IMLS engaged in a communications campaign to reach a broad array of museum types (i.e., arboretums, zoos, history museums) through social media, conferences, and email communication.

Developing the NMS Questionnaire

Another key area that relied heavily on the project's preliminary research was the National Museum Survey pilot's questionnaire. The questionnaire covered the following topics, which were identified by the museum field as both practically important to museum administrators and potentially easy for them to report:

- Institutional Characteristics (and Eligibility)
- Facilities
- Finances
- Human Resources
- Admissions, Visitors, and Outreach
- Digital Presence
- Diversity, Equity, and Inclusion
- Survey-Taking Experience (Pilot only)

The museum field then shaped the design of the questions themselves through continuous feedback

from the project's panel of SMEs and two rounds of cognitive interviewing⁷ with administrators from museums of varying sizes and disciplines.

Potential Questionnaire Enhancements

When presented to respondents, however, one section of the questionnaire proved to be particularly problematic: 60 percent of responding museums skipped at least one question requesting their museum's financial data.⁸

Respondents indicated that the information sought in these questions was difficult to gather or not readily available. Others said that the calculations they typically complete for their own purposes differed from those requested in the questionnaire. Additionally, respondents expressed discomfort in answering financial questions as a part of the NMS. Addressing this challenge is a key consideration for the team as it works to ensure the validity of the survey results.

⁶For example, IMLS could consider inviting experts from the American Public Gardens Association or Association of Zoos & Aquariums.

⁷The cognitive interviewing consisted of a series of in-person interviews with museum administrators. The aim was to assess whether the survey questions were being understood by respondents in the ways intended by the survey researchers. AIR conducted two rounds of one-hour cognitive interviews with 23 museum administrators to test 27 survey items across both rounds.

While respondents with annual budgets of less than \$1 million found only the financial section challenging, those with annual budgets of \$1 million or more indicated difficulties with the facilities section as well. In the future annual NMS, IMLS will explore ways to improve the capture of information from large institutions.

While respondents expressed satisfaction with the subject matter covered by the survey, they did request additional content in two areas: more details on staffing, and insights into how museums engage in partnerships and collaborations. Investigating these topics presents challenges across museums of varying sizes and disciplines, but the agency will delve deeper into these areas ahead of intended 2025 first annual NMS collection.

Respondents' Survey-Taking Experience

IMLS prioritized designing a survey that would be easy for museum administrators to complete, and these efforts appear to have been successful. The NMS pilot included questions that sought to capture information about the survey-taking experience.

An Easy-to-Take Survey

Pilot respondents indicated that the survey was easy to complete⁹ and no additional staff were required for completing the survey.¹⁰ Moreover, NMS pilot survey respondents reported that the survey was easy to navigate.¹¹ There were limited functionality issues with the survey.¹²

These positive results flow from several features that IMLS implemented to reduce burden and improve respondents' survey-taking experience. Enhancements to the pilot's survey administration included providing the option to skip over and return to questions later, as well as a clickable table of contents that allowed participants to skip back and forth between sections.

In addition, IMLS provided a reference copy of the survey in the form of a printable PDF,¹³ allowing museums to gather the requested information prior

to entering data into the survey's online portal. Respondents reported using this reference copy, and those who used it found it helpful.¹⁴ Future NMS administrations will consider enhancing this document by making it a fillable PDF, which would allow museums to digitally share their survey responses internally instead of relying on printed paper copies.

A Survey that Does Not Take Too Much Time

As another marker of success, pilot survey respondents reported that the survey was within the two-hour limit found to be acceptable by preliminary research participants.¹⁵

In follow-up contacts with nonrespondents, only some of those who recalled receiving an invitation to complete the pilot NMS had tried to access it online. The primary reason cited for not completing the survey was a lack of time. This suggests that a misperception around survey length could be an issue among potential participants. In future NMS administrations, the agency will focus on ensuring that the survey takes less than two hours to complete, and that museums understand how quick and easy other survey takers' experience has been.

⁸ Questions that were most frequently skipped by respondents: Q4-1. What was your institution's [earned operating, investment, grant, contributed] revenue for the most recent fiscal year (FY) for which you can report financial data? | Q4-3. What were your institution's total personnel [employee salaries, employee benefits, independent contractors, professional fees] and non-personnel expenses for the most recent fiscal year (FY) for which you can report financial data?

⁹ Q9-3: How easy or difficult was it for you to complete the National Museum Survey pilot on behalf of your institution? Please consider all aspects of taking the survey when answering, from gathering the information requested all the way through to submitting your answers.

¹⁰ Q9-4: How many staff at your institution were involved in completing the National Museum Survey pilot?

¹¹ Q9-10: How easy or difficult was it to navigate through the various sections of the National Museum Survey pilot?

¹² Q9-11: Did you experience any functionality issues when taking the survey?

¹³ The PDF was available for download via a link provided in survey invitation emails and on the IMLS NMS Frequently Asked Questions web page used for the project.

¹⁴ Q9-9: How useful was the National Museum Survey Reference Guide in preparing your institution's survey responses?

¹⁵ Q9-5: Approximately how much time did it take you and your colleagues to complete the National Museum Survey pilot, including the time spent gathering the requested information?

Lessons Learned About Administering a National Museum Survey

The NMS pilot encountered challenges in achieving survey responses, with the participation of just 17 percent of the solicited museums.¹⁶ The primary issue, likely contributing to this lower response rate, was the difficulty in obtaining optimal contacts for the surveyed museums. Although preliminary research suggested that invitations sent to a general institutional inbox would be routed to the relevant respondent in most museums,¹⁷ individualized links¹⁸ emailed by IMLS to sampled museums frequently missed their intended recipients.

In follow-up telephone interviews with museums that were sent invitations but did not take the survey, many reported not receiving their invitations. IMLS will retrieve email contacts for the personnel responsible for survey completion within each institution before sending out invitations to the full annual NMS, aiming to improve overall response rates.

Contact Strategies

Additional proof of the project's need for increased specificity in its contacts came from the seven contacting experiments included in the pilot. Each contact experiment was designed to determine better ways to reach responding institutions.¹⁹ Through

these contacting experiments IMLS found that a quarter of the museums that received a telephone call in advance of the survey's launch offered updated contact information; further, that those museums that received a pre-launch call responded at a rate seven percentage points higher than those that only received emails.

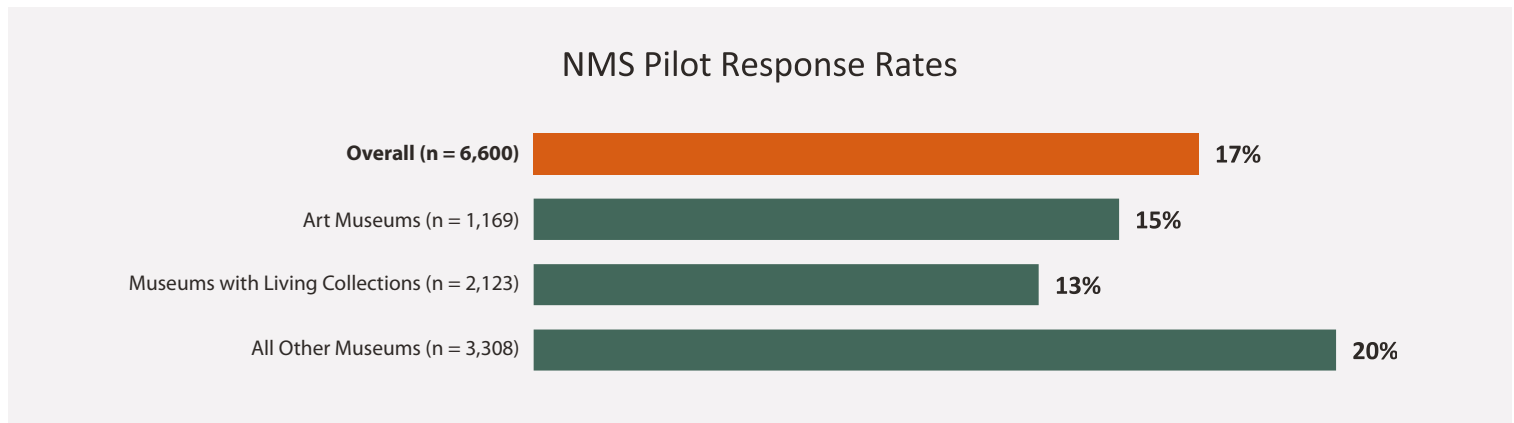
The museums with the highest response rates to the pilot received a reminder telephone call approximately half-way through the field period. These museums responded at a rate nine percentage points higher than museums that received only emails, and the primary reason was largely the same: those phone calls allowed researchers to update and confirm email addresses while emphasizing the survey's importance.

Taken together, these results suggest that IMLS should employ targeted telephone calls during future NMS administrations to achieve higher response rates among solicited museums.

Responding Museums by Discipline

The pilot also demonstrated that certain museum disciplines responded at higher rates than others (**Figure 1**).²⁰ Most notably, art museums and museums with living collections²¹ were less likely to complete the NMS pilot than other types of museums.

Figure 1: NMS Pilot Survey Response Rates by Museum Discipline (AAPOR RR4)



¹⁶ Response rates for the NMS pilot survey are calculated using the [American Association of Public Opinion Research's Response Rate 4 \(AAPOR RR4\)](#), which removes ineligible responses from both the numerator and denominator and reduces the number of nonrespondents in the denominator by the proportion of ineligible responses among all responses.

¹⁷ Survey invitations were typically sent to an institution's general informational email address (e.g., info@museum.org). IMLS was unable to retrieve addresses for individual contacts for most sampled institutions prior to fielding the pilot survey.

¹⁸ Two emails announcing the survey were sent before the field phase, with reminder messages sent to nonresponding museums once per week.

¹⁹ These experiments consisted of the following types of outreach: (1) Emails with alternate content providing additional explanation of the background and importance of the survey; (2) Letters mailed two weeks before the survey opened; (3) Postcards mailed two weeks before the survey opened; (4) Hardcopy reference guides with cover letters mailed in a large envelope two weeks before the survey opened; (5) Telephone calls made to sampled museums one or two weeks before the survey opened; (6) Postcards mailed five weeks after the survey opened; and (7) Telephone calls made to sampled museums five or six weeks after the survey opened.

²⁰ The findings did not reveal substantial variation by geographic region.

²¹ Museums with living collections include aquariums, arboretums, botanical gardens, nature centers, and zoos.

As noted earlier, IMLS defines the term “museum” to include many disciplines that allow the public to view and interact with both living collections, such as those found at botanical gardens, aquariums, and zoos, and with inanimate collections, such as those found at art museums or science and technology centers.

These response rate differences could be attributable in part to whether these institutions self-identify as “museums” and view themselves as eligible for the survey. In its preliminary research, IMLS found that certain museum types saw themselves, for example, as “zoos” or “botanical gardens” rather than museums. As a result, the survey asked for their preferred term and dynamically updated the survey’s questions with their response.

A larger problem, however, may be the difficulty inherent in determining whether these types of museums are survey-eligible prior to recruitment.²² Consequently, the list of museums used for the NMS

pilot included many ineligible contacts under these categories.

IMLS will prioritize outreach to these lower-responding museums, both directly and through their professional organizations. The goal is to confirm their contact information for the survey and to emphasize to them that IMLS is eager to include their input in the National Museum Survey.

Timing of the Survey

Finally, the time of year may have posed an obstacle to response. Preliminary research found that a plurality of participants cited late winter as the best time to field the survey, as it aligned well with their fiscal year calendars. However, due to agency timing constraints, the National Museum Survey pilot was administered online during the late summer,²³ the second-most-cited time of year for ease of survey completion.

Uncovering the National Museum Survey’s Intended Audience

IMLS needed to assemble a “population frame,” or a contact list of the universe of potentially eligible²⁴ museums to whom a national museum survey could be sent, for the purpose of running both the NMS pilot and the future annual NMS. Assembling this list was a longstanding challenge, the resolution of which resulted in a population frame that included about 20,000 museums across the country.²⁵

IMLS undertook extensive efforts to assemble the NMS population frame because understanding who does and does not participate in the survey is vital to providing statistically valid results. Most currently available surveys rely on the membership lists of the hosting organizations, which naturally leave out those who are not members of those organizations. In addition, these organizations are typically focused on singular museum disciplines. As such, they do not cover the full, rich variety of disciplines that the sector represents.

Including all museum sectors in the NMS will allow policymakers, the media, the public, and museum administrators to better understand the full context of the museum sector’s work. There will be data available for both those who wish to investigate

specific disciplines and for those who wish to quantify the work of the sector as a whole. Notably, this will provide vital information for policymakers and other stakeholders to better understand the scope and scale of museums’ reach, especially in times of crisis.

IMLS started developing the NMS population frame by identifying and examining publicly and privately available datasets that include lists of museums. This selection process led to IMLS purchasing contact lists from Yelp and the Official Museum Directory that were then combined and compared against additional resources, such as IRS records of registered nonprofits.

The team further refined this list by incorporating a number of innovative methods: ChatGPT 3.5, OpenAI’s large-scale language-generation model, was used to find business URLs that were missing from the initial frame. Websites for the included museums were checked using custom web scraping code deployed by researchers to obtain email addresses. The online crowdsourcing platform Amazon MTurk was used for categorizing the museums into disciplines and for appending the frame with contact information that could not be found through other sources.

²⁴ Based on input from the field through the project’s SMEs, preliminary research, and agency leadership, eligibility was defined as follows: A unit of federal, state, local, or tribal government or a not-for-profit institution that serves the public in a physical location it owns or operates; provides exhibitions and programs; has as its primary function housing, displaying, and caring for animate or inanimate objects that form the core of its exhibitions, programs, and research; under normal circumstances is open to the public 120 days or more per year, either through specific hours of operation or by being available by appointment; and has at least one staff member, or the full-time equivalent, whether paid or unpaid.

²⁵ The NMS population frame will be solidified and updated leading up to the full NMS in 2025, when more specific population estimates will be available.

Despite these extensive efforts, IMLS still had trouble contacting the specific person responsible for survey taking within the contacted museums. As a result, the agency plans to complete large-scale outreach to the field during 2024 to confirm and update the contacts in its list of museums and to spread the word about the survey's value to the field. Once complete, the agency's final list will allow the team to provide generalizable data following the first annual collection in 2025.

In cases where the annual collection of a piece of information does not make sense, or where information is not needed at an institutional level of analysis, IMLS will also be able to use its final list of museums to field "offshoot topical surveys" to only a statistically drawn subsample of museums. Completing these offshoot surveys will allow IMLS to retrieve national estimates on specific topics without overburdening the full respondent base with additional questions.²⁶

Methodology: Pilot Design Through Administration

As previously mentioned and described in **Exhibit 1**, the development and administration of the NMS pilot was based on an extensive, methodical process designed to incorporate feedback from the museum field at each step. Research included:

- A comprehensive review of museum sector literature and research, including systematic benchmarking of relevant Federal Statistical System and museum sector surveys;
- Ongoing input from engaged SMEs that included leading museum professionals, researchers, and community partners;
- Focus groups and a survey gathering feedback from hundreds of museum administrators to determine acceptable survey burden, survey content preferences, methods of outreach, and other key aspects of survey design;²⁷
- Cognitive interviews testing the NMS questionnaire's content as formulated through SME input and the project's respondent research;²⁸
- The NMS pilot,²⁹ which included a survey-taking experience section and seven field experiments testing various modes of respondent contact;³⁰ and
- A non-response study with 50 non-responding institutions designed to better understand how IMLS can contact these institutions in the future.

²⁶ However, this approach would limit museums' ability to compare their own data to those of other museums, since not all museums would participate.

²⁷ Eight focus groups were conducted with 37 museum administrators (16 from small museums and 21 from medium/large museums). A total of 400 museums completed the survey.

²⁸ Twenty-three museum administrators participated in the cognitive interviews.

²⁹ The pilot was administered using the web-based survey platform Qualtrics.

³⁰ Seven experimental groups were created, consisting of stratified subsamples of 600 museums that received varying email messaging, postal mail outreach, or telephone outreach in addition to the project's base-level email outreach. Additionally, three of these seven experimental groups each included 150 additional invited museums for which the IMLS team was unable to retrieve email addresses prior to the field phase. Response rates from the experimental groups were compared to results from the project's main sample, which included 2,400 invited museums receiving only the standard email outreach. Experimental methods and data will be thoroughly addressed in subsequent detailed reporting for this project.

Acknowledgments

IMLS is indebted to the thousands of cultural institutions that participated in the groundwork for, and the fielding of, the National Museum Survey pilot.

A partial list of institutions contributing to the groundwork research can be found online at <https://www.imls.gov/sites/default/files/2023-06/nms-pilot-acknowledgements.pdf>

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